



April 14, 2011

Mr. Steven F. Nightingale, P.E.  
Manager, Permit Section  
Illinois Environmental Protection Agency  
Bureau of Land  
1021 North Grand Avenue East  
Springfield, Illinois 62794

**Subject: Groundwater Monitoring Report – 1<sup>st</sup> Quarter 2011  
Roxana, Illinois  
119115002 – Madison County  
Equilon Enterprises LLC d/b/a Shell Oil Products US  
Log No. B-43-CA-16 and 18**

Dear Mr. Nightingale:

On behalf of Shell Oil Products US, URS Corporation is submitting the enclosed report for your review. This sampling was required by Condition 7 of the Agency's letter dated August 5, 2010.

If you have any questions during your review, please contact Kevin Dyer, SOPUS project manager, at [kevin.dyer@shell.com](mailto:kevin.dyer@shell.com) (618/288-7237), or me at [bob\\_billman@urscorp.com](mailto:bob_billman@urscorp.com) (314/743-4108).

Sincerely,

Robert B. Billman  
Senior Project Manager

Enclosures: RCRA Corrective Action Certification and Report (original plus 2 copies)

Cc: Kevin Dyer, SOPUS  
Marty Reynolds, Village of Roxana  
Eric Petersen, ConocoPhillips

1001 Highland Plaza Drive West, Suite 300  
St. Louis, MO 63110  
Phone: 314.429.0100  
Fax: 314.429.0462

# ILLINOIS EPA RCRA CORRECTIVE ACTION CERTIFICATION

*This certification must accompany any document submitted to Illinois EPA in accordance with the corrective action requirements set forth in a facility's RCRA permit. The original and two copies of all documents submitted must be provided.*

## 1.0 FACILITY IDENTIFICATION

Name: WRB Refining LLC - Wood River Refinery County: Madison  
Street Address: 900 South Central Ave. Site No. (IEPA): 1191150002  
City: Roxana, IL 62084 Site No. (USEPA): ILD 080 012 305

## 2.0 OWNER INFORMATION

Name: Not Applicable

Mailing Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Contact Name: \_\_\_\_\_

Contact Title: \_\_\_\_\_

Phone No.: \_\_\_\_\_

## 3.0 OPERATOR INFORMATION

Equilon Enterprises LLC d/b/a Shell Oil Products US

17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Kevin Dyer

Principal Program Manager

618-288-7237

## 4.0 TYPE OF SUBMISSION (check applicable item and provide requested information, as applicable)

- RFI Phase I Workplan/Report  
 RFI Phase II Workplan/Report  
 CMP Report; Phase \_\_\_\_\_  
 Other (describe):

Groundwater Sampling Report – 1st Quarter 2011  
Date of Submittal 4-14-11

IEPA Permit Log No. \_\_\_\_\_

Date of Last IEPA Letter  
on Project 4/6/11

Log No. of Last IEPA  
Letter on Project B-43R-CA-9

Does this submittal include groundwater information:  Yes  No

## 5.0 DESCRIPTION OF SUBMITTAL: (briefly describe what is being submitted and its purpose)

Groundwater sampling report for the 1st quarter 2011 sampling event in the project area in the Village of Roxana.

## 6.0 DOCUMENTS SUBMITTED (identify all documents in submittal, including cover letter; give dates of all documents)

Cover letter, RCRA Corrective Action Certification and Groundwater Sampling Report – 1st Quarter 2011, dated 4-14-11

## 7.0 CERTIFICATION STATEMENT - (This statement is part of the overall certification being provided by the owner/operator,

*professional and laboratory in Items 7.1, 7.2 and 7.3 below).* The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

IEPA RCRA Corrective Action Certification

For: Equilon Enterprises LLC d/b/a Shell Oil Products US

Date of Submission: 4-14-11

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2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: \_\_\_\_\_

(Date)

Title: \_\_\_\_\_

Operator Signature: Kevin E. Meyer

4/14/11  
(Date)

Title: Principal Program Manager

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Professional's Signature: Robert B. Billman

4/14/11  
Date

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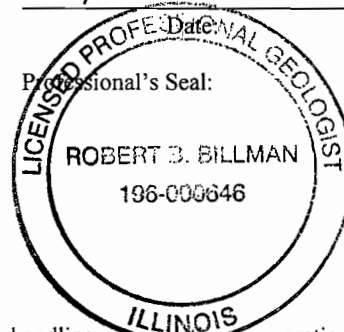
Professional's Seal:

Professional's Address: URS Corporation

1001 Highlands Plaza Drive West

St. Louis, MO 63110

Professional's Phone No.: 314-743-4108



7.3 LABORATORY CERTIFICATION (if necessary) - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA

Name of Laboratory \_\_\_\_\_

Signature of Laboratory Responsible Officer

Date

Mailing Address of Laboratory

Name and Title of Laboratory Responsible Officer

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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 Contact Title: \_\_\_\_\_  
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Equilon Enterprises LLC d/b/a Shell Oil Products US

17 Junction Drive, PMB #399  
Glen Carbon, IL 62034

Kevin Dyer  
Principal Program Manager  
618-288-7237

**4.0 TYPE OF SUBMISSION** (check applicable item and provide requested information, as applicable)

<input type="checkbox"/> RFI Phase I Workplan/Report	IEPA Permit Log No. _____
<input type="checkbox"/> RFI Phase II Workplan/Report	Date of Last IEPA Letter _____
<input type="checkbox"/> CMP Report; Phase _____	on Project <u>4/6/11</u>
<input checked="" type="checkbox"/> Other (describe):	Log No. of Last IEPA _____
<u>Groundwater Sampling Report - 1st Quarter 2011</u>	Letter on Project <u>B-43R-CA-9</u>
Date of Submittal <u>4-14-11</u>	Does this submittal include groundwater information: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No

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Title: \_\_\_\_\_

Operator Signature: \_\_\_\_\_ (Date) \_\_\_\_\_

Title: Principal Program Manager

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Professional's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Professional's Name: Robert B. Billman

Professional's Seal:

Professional's Address: URS Corporation

1001 Highlands Plaza Drive West

St. Louis, MO 63110

Professional's Phone No.: 314-743-4108

X (7.3)

LABORATORY CERTIFICATION (if necessary) - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory \_\_\_\_\_

Accutest Laboratories  
495 Technology Center West  
Building One  
Marlboro, MA 01752  
(508) 481-6200

X Reza Tans 4-11-11  
Signature of Laboratory Responsible Officer Date

Reza Tans / Lab director  
Name and Title of Laboratory Responsible Officer

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 \_\_\_\_\_

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Contact Title: \_\_\_\_\_

Phone No.: \_\_\_\_\_

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17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Kevin Dyer

Principal Program Manager

618-288-7237

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 CMP Report; Phase \_\_\_\_\_  
 Other (describe):  
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Professional's Name: Robert B. Billman

Professional's Seal: \_\_\_\_\_

Professional's Address: URS Corporation

1001 Highlands Plaza Drive West

St. Louis, MO 63110

Professional's Phone No.: 314-743-4108

X (7.3)

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[Signature] 4-11-11  
Signature of Laboratory Responsible Officer Date

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Reza Tard / Lab director  
Name and Title of Laboratory Responsible Officer

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17 Junction Drive, PMB #399

Glen Carbon, IL 62034

Kevin Dyer

Principal Program Manager

618-288-7237

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 Other (describe):

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IEPA Permit Log No. \_\_\_\_\_

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 on Project 4/6/11

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Letter on Project B-43R-CA-9

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M91346

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Title: \_\_\_\_\_

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Title: Principal Program Manager

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Professional's Name: Robert B. Billman

Professional's Seal: \_\_\_\_\_

Professional's Address: URS Corporation

1001 Highlands Plaza Drive West

St. Louis, MO 63110

Professional's Phone No.: 314-743-4108

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monte 4-11-11  
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Rezu Tand / Lab Director  
Name and Title of Laboratory Responsible Officer

M97264

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Glen Carbon, IL 62034

Contact Name: \_\_\_\_\_

Kevin Dyer

Contact Title: \_\_\_\_\_

Principal Program Manager

Phone No.: \_\_\_\_\_

618-288-7237

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(X) proced 4-11-11

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**6.0 DOCUMENTS SUBMITTED** (identify all documents in submittal, including cover letter; give dates of all documents)

Cover letter, RCRA Corrective Action Certification and Groundwater Sampling Report - 1st Quarter 2011, dated 4-14-11

**7.0 CERTIFICATION STATEMENT** - (This statement is part of the overall certification being provided by the owner/operator, professional and laboratory in Items 7.1, 7.2 and 7.3 below). The activities described in the subject submittals have been carried out in accordance with procedures approved by Illinois EPA. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.



114/421

IEPA RCRA Corrective Action Certification

For: Equilon Enterprises LLC d/b/a Shell Oil Products US

Date of Submission: 4-14-11

Page 2

7.1 **OWNER/OPERATOR CERTIFICATION** (Must be completed for all submittals. Certification and signature requirements are set forth in 35 IAC 702.126.) All submittals pertaining to the corrective action requirements set forth in a RCRA Permit must be signed by the person designated below (or by a duly authorized representative of that person):

1. For a Corporation, by a principal executive officer of at least the level of vice-president.
2. For a Partnership or Sole Proprietorship, by a general partner or the proprietor, respectively.
3. For a Governmental Entity, by either a principal executive officer or a ranking elected official.

A person is a duly authorized representative only if:

1. the authorization is made in writing by a person described above; and
2. the written authorization is provided with this submittal (a copy of a previously submitted authorization can be used).

Owner Signature: \_\_\_\_\_ (Date) \_\_\_\_\_

Title: \_\_\_\_\_

Operator Signature: \_\_\_\_\_ (Date) \_\_\_\_\_

Title: Principal Program Manager

7.2 **PROFESSIONAL CERTIFICATION (if necessary)** - Work carried out in this submittal or the regulations may also be subject to other laws governing professional services, such as the Illinois Professional Land Surveyor Act of 1989, the Professional Engineering Practice Act of 1989, the Professional Geologist Licensing Act, and the Structural Engineering Licensing Act of 1989. No one is relieved from compliance with these laws and the regulations adopted pursuant to these laws. All work that falls within the scope and definitions of these laws must be performed in compliance with them. The Illinois EPA may refer any discovered violation of these laws to the appropriate regulating authority.

Professional's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Professional's Name: Robert B. Billman

Professional's Seal:

Professional's Address: URS Corporation

1001 Highlands Plaza Drive West

St. Louis, MO 63110

Professional's Phone No.: 314-743-4108

7.3

**LABORATORY CERTIFICATION (if necessary)** - The sample collection, handling, preservation, preparation and analysis efforts for which this laboratory was responsible were carried out in accordance with procedures approved by Illinois EPA.

Name of Laboratory \_\_\_\_\_

**Accutest Laboratories**  
495 Technology Center West  
Building One  
Marlboro, MA 01752  
(508) 481-6200

\* [Signature] 4-11-11  
Signature of Laboratory Responsible Officer Date

Reza Fard / Lab Director  
Name and Title of Laboratory Responsible Officer

**R E P O R T**

**GROUNDWATER SAMPLING –  
1<sup>ST</sup> QUARTER 2011**

**Roxana, Illinois**

*Prepared for:*

Shell Oil Products US  
17 Junction Drive  
PMB#399  
Glen Carbon, Illinois 62034

April 2011



URS Corporation  
1001 Highlands Plaza Drive West, Suite 300  
St. Louis, MO 63110  
(314) 429-0100  
**Project 21562593**

Certification RCRA Corrective Action Form

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Appendix B Data Review Sheets and Laboratory Analytical Reports

URS Corporation (URS) is submitting this report on behalf of Shell Oil Products US (SOPUS) for the 1<sup>st</sup> Quarter 2011 (1Q11) gauging and groundwater sampling activities conducted in the Village of Roxana, Illinois (**Figure 1**). Some wells within the WRB Refining LP Wood River Refinery (WRR) were also sampled as part of this event. The area within the Village of Roxana is generally bounded by Illinois Route 111 and the west property boundary (aka west fenceline) of the WRR. Activities within the refinery were conducted in cooperation with ConocoPhillips Company (COP). The combined area is collectively referred to as the “Investigation Area” in this report.

In a letter from the Illinois Environmental Protection Agency (IEPA) to Shell dated August 5, 2010, the Agency requested various site characterization and monitoring activities and initiation of an interim groundwater monitoring program. This program began in the 4<sup>th</sup> quarter 2010, and the first report was submitted on January 14, 2011. On March 3, 2011, a call was held between representatives of SOPUS, IEPA and URS to discuss the groundwater monitoring program and IEPA’s general comments on the 4<sup>th</sup> quarter 2010 monitoring report. Modifications based on some of these comments have been incorporated into this report. Other comments that require more data evaluation will be incorporated beginning with the 2<sup>nd</sup> quarter 2011 report.

Groundwater samples were collected and analyzed during the 1<sup>st</sup> quarter to meet the requirements of the interim groundwater monitoring program. **Figure 2** shows the monitoring wells that are part of the interim monitoring well network.

## **SECTION TWO**

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The monitoring well gauging and sampling activities discussed in this section are part of the interim groundwater monitoring program.

### **2.1 ADDITIONAL ACTIVITIES**

This section describes additions to the monitoring program for the 1<sup>st</sup> quarter event.

- A loss of groundwater control by the WRR was initially reported to the Agency in a Groundwater Flow Control Notification letter dated February 4, 2011 and subsequently in a 30-Day Report for Groundwater Flow Control dated March 4, 2011. One of the resulting actions included gauging a subset of the refinery and Village monitoring wells on a weekly basis, and this has continued to date, and the data have been reviewed for this report.
- Hydrocarbon light non-aqueous phase liquid (LNAPL) was observed in a small diameter piezometer, ROST-4-PZ (located at the intersection of 3<sup>rd</sup> and Chaeffer Streets), during the aforementioned gauging events. Prior to 1Q11, product had not been observed since its installation (Summer 2009). The presence of product was reported to the Agency in a Notification of Free Product Observation letter dated February 7, 2011 and an Additional Information Regarding the 2/7/11 Notification of Free Product letter dated March 14, 2011. To date, product measurements have ranged from no product to 0.04 feet.
- Monitoring well P-93D (on the WRR North Property) became unserviceable due to a failure of the sampling pump, which had become stuck in the well. As a result, this well was not sampled during the 1Q11 event. The well was abandoned and a replacement well was installed and developed during March 2011. The replacement well (with the same ID) was installed within 10 feet of the existing monitoring well and was screened to monitor the same zone. The former P-93D was grouted in place and cut-off about 3 feet below grade per Illinois State regulations. The replacement well will be incorporated into the monitoring program starting in the 2<sup>nd</sup> Quarter 2011.

### **2.2 GROUNDWATER GAUGING AND SAMPLING**

#### **Groundwater Gauging**

A comprehensive round of gauging was conducted on January 13 and 14, 2011 to evaluate groundwater flow direction and identify separate phase product in the Investigation Area.

## **SECTION TWO**

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### **Low Flow Purging and Sampling**

Low-flow purging and sampling procedures were followed for most wells during the sampling event. Prior to sampling, the initial water level was measured and recorded on the field sheets.

Monitoring wells MW-1 through MW-13<sup>1</sup> and P-54 were purged and sampled using a stainless steel submersible bladder pump and bonded designated polyethylene tubing.<sup>2</sup> The submersible bladder pump was powered by the QED Sample Pro controller unit. A new bladder was used at each monitoring well. The submersible bladder pump with the proper length of designated polyethylene tubing was slowly lowered into the monitoring well to be sampled and set with the pump intake near the midpoint of monitoring well screen. The tubing from the pump was connected to a flow-through cell, which discharged into a 5-gallon plastic bucket. Pumping was performed at a low flow rate ( $\leq 200$  mL/minute) so as to not create drawdown of the water level within the monitoring well. During groundwater purging, water quality parameters (pH, temperature, conductivity, turbidity, dissolved oxygen (DO) and oxidation-reduction (ORP)) were measured and recorded on the field sheets after every flow-through cell volume. Purging continued until a minimum of three flow-through cell volumes of water were removed and the water quality parameters stabilized. Once stabilization was achieved, the groundwater flow was diverted from the flow-through cell and groundwater samples were collected for volatile organic compound (VOC) and semivolatile organic compound (SVOC) analysis. Groundwater sampling data sheets are included in **Appendix A**.

### **Well Wizard® Purging and Sampling**

Monitoring wells P-93A, P-93B, and P-93C in the WRR North Property were purged and sampled using a dedicated stainless steel QED Well Wizard® groundwater sampling pump. These wells are part of the WRR monitoring program, and the sampling procedures for these wells are different than those in Roxana. The Well Wizard® pump and associated tubing is dedicated to each well and remains in place between sampling events. The pump intake is positioned near the midpoint of the well screen and the pump is operated using a QED MicroPurge Engine/Compressor with a QED Control Box. The depth to water measurement at each well is used to calculate well volume of each well. Purging of each of these wells continued until a minimum of three well volumes of water was removed from the well. Water quality parameters (i.e., pH, temperature, conductivity and turbidity) were then measured and

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<sup>1</sup> Well MW-13 was installed at the end of 4<sup>th</sup> quarter 2010 and was sampled for the first time during this 1<sup>st</sup> quarter 2011 sampling event.

<sup>2</sup> “Designated” tubing is used for multiple sampling events, and is stored in a bag designated for the particular well between sampling events.

## **SECTION TWO**

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groundwater samples were collected for VOC and SVOC analysis. Groundwater sampling data sheets are included in **Appendix A**.

### **2.3 HEALTH & SAFETY, DECONTAMINATION, AND INVESTIGATIVE DERIVED WASTE (IDW)**

The quarterly sampling activities were performed in general accordance with the investigation area Health and Safety Plan (HASP).

Prior to beginning site work, and at the start of work each day, a daily safety meeting was held. The purpose of this meeting was to discuss the day's planned activities and to address any potential health and safety concerns.

URS field personnel primarily wore U.S. Environmental Protection Agency (USEPA) modified Level D personal protective equipment (PPE), which included hard hat, boots, safety glasses, etc. In addition, work within the WRR was performed wearing flame retardant clothing (FRCs) per WRR requirements (in areas where required).

A photoionization detector (PID) with a 10.2 electron volt (eV) probe, combustible gas indicator (CGI), and individual Hydrogen Sulfide gas detectors (for locations inside WRR) were used during the field activities to monitor air quality for health and safety purposes. Field instruments were calibrated prior to use each day in accordance with the manufacturer's specifications.

Health and safety related information was primarily recorded in field logbooks.

A low energy work permit was also issued each day by COP operators for groundwater sampling activities within the WRR. COP personnel inspected the work areas and monitored the ambient air, as necessary, prior to the issuance of daily work permits.

Field personnel and equipment underwent decontamination procedures to ensure the health and safety of those present, to maintain sample integrity, and to minimize cross contamination. Non-disposable (reusable) sampling equipment (e.g., groundwater pump) was decontaminated prior to the collection of each analytical sample, between sample locations, and prior to leaving the investigation site by washing with LiquiNox and a distilled water rinse. Personnel and small equipment decontamination was performed at the sample locations.

Investigative derived waste (IDW), such as purge water and decontamination water, generated during monitoring well sampling activities was collected, stored and disposed properly. Expendable materials (e.g., disposable sampling equipment such as gloves and tubing) having a low probability of impact were collected in trash bags and disposed as municipal waste.

## **SECTION TWO**

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Decontamination fluids and purge water from wells at the Public Works facility (i.e., MW-7, MW-8) were collected in 55-gallon steel drums staged at the Public Works Yard. This material is managed as hazardous waste based on prior characterization and is being disposed at the Heritage Environmental Disposal Facility in East Liverpool, Ohio.

Decontamination fluids and purge water from wells in the other areas of the Village of Roxana were collected in a 6,900-gallon double-walled polyethylene tank staged at the Public Works Yard. This material is managed as non-hazardous waste based on prior characterization and will be managed as such.

Decontamination fluids and purge water related to or generated from work within the WRR were collected and disposed, per a COP issued permit, through the WRR's National Pollutant Discharge Elimination System (NPDES) permitted Wastewater Treatment Plant (WWTP).

### **2.4 SAMPLE HANDLING AND LABORATORY TESTING**

Samples were collected in laboratory-supplied containers, labeled in the field and information was recorded on the chain of custody (COC) forms at the time of sampling. The sample ID format used, starting with 1<sup>st</sup> quarter 2011, is "well ID-ROX-date". The COCs can be found with the analytical reports in **Appendix B**. After collection, the samples were placed on ice, packaged to prevent damage during shipment, and cooled to approximately 4°C. The samples were then delivered, under the proper COC documentation, to the laboratory for analysis. Samples were analyzed by Accutest Laboratories in Marlborough, Massachusetts for VOCs, via USEPA Method 8260B, and SVOCs, via USEPA Method 8270C.

A total of 28 groundwater samples (20 investigative samples, 3 field duplicates, 3 equipment blanks, and 2 MS/MSD) were prepared and analyzed for VOCs and SVOCs. A trip blank (each consisting of one 40-mL vial) was included in every cooler which contained samples for VOC analysis. A total of 5 trip blanks were analyzed for VOCs for the groundwater sampling event.

### **2.5 DATA QUALITY REVIEW AND DATA MANAGEMENT**

Laboratory data were provided in electronic form, and were independently reviewed and qualified by URS through a Level III validation. Evaluation of the data followed procedures outlined in the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (USEPA 2008). The laboratory assigned data qualifiers on the basis of their quality control or to indicate sample analysis information (e.g., dilutions). Data qualifiers



## **SECTION TWO**

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were also added by URS, as appropriate, and are included on the data table and the laboratory result pages (**Appendix B**). The results of the data review are discussed in Section 3.2.

Field data and documentation collected as part of this scope of work became part of the project file. URS maintains the files for the site, and the database management system.

The following documentation was completed and supplements the COC records:

- Field logbooks
- Field sample collection sheets
- Safety documentation

This section presents the results of the 1<sup>st</sup> quarter 2011 groundwater sampling event.

### 3.1 GROUNDWATER GAUGING AND SAMPLING RESULTS

**Table 1** presents cumulative information from the gauging events for the subject monitoring wells and piezometers. Water levels were above the top of the screens in many of the wells gauged for this event, consistent with the past several quarters. **Figure 3** illustrates the potentiometric surface observed during this gauging. **Table 2** presents cumulative information on groundwater field parameters obtained during sampling.

### 3.2 DATA QUALITY REVIEW RESULTS

Twenty investigative groundwater samples, three pairs of field duplicates, two matrix spike/matrix spike duplicates (MS/MSDs), five trip blanks, and three equipment blanks were collected in the first quarter of 2011. Trip blanks, equipment blanks and laboratory method blanks were analyzed to evaluate for the existence and magnitude of any contamination resulting from field and laboratory activities. Compounds detected in blanks are specified in the data reviews (**Appendix B**). The following were qualified due to blank contamination: the SVOC compound, diethyl phthalate was qualified non-detect (**U**) in 17 samples; and the VOC compounds acetone, methyl tert-butyl ether, and benzene were qualified (**U**) in 6 samples. Based on the above-mentioned criteria, the groundwater results reported for the analyses performed were accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, surrogate and field duplicate data were achieved for these sample delivery groups (SDGs) to meet the project objectives.

### 3.3 ANALYTICAL RESULTS AND DISCUSSION

The laboratory analytical detections for the groundwater samples collected during this event are presented in **Table 3<sup>3</sup>**.

The following petroleum hydrocarbons were reported at concentrations above the laboratory reporting limit in groundwater samples during the 1<sup>st</sup> Quarter 2011 sampling event.

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<sup>3</sup> The P-93 nested wells are required to be sampled as part of both the WRR and the Roxana/Route 111 groundwater monitoring programs. These programs currently require different laboratory analyses and therefore two different samples were collected. These samples are collected at the same time and using the same protocols. The analytical results between the two groundwater monitoring programs may vary slightly.

Benzene	Methyl tert-Butyl Ether (MTBE)	
<i>n-Butylbenzene</i>	n-Propylbenzene	2,4-Dimethylphenol
sec-Butylbenzene	Toluene	<i>bis(2-Ethylhexyl)phthalate</i>
<i>tert-Butylbenzene</i>	<i>1,1,2-Trichloroethane</i>	2-Methylnaphthalene
<i>Chloroethane</i>	1,2,4-Trimethylbenzene	<i>2-Methylphenol (o-Cresol)</i>
Ethylbenzene	1,3,5-Trimethylbenzene	3 & 4-Methylphenol (m & p-Cresol)
Isopropylbenzene	m,p-Xylene	Naphthalene
	o-Xylenes	Phenol
	<i>Diethyl phthalate</i>	

Fourteen of these 23 constituents were also detected during the 4<sup>th</sup> quarter 2010 groundwater sampling event. The newly detected constituents, indicated in italics in the list above, were present at low part per billion (ppb) levels. At least in some cases, these detections may be due to laboratory reporting limit differences, as Accutest Laboratories is now used for the testing. The analytical detections were compared with the TACO Class 1 Groundwater Quality Standards (GQS'), and the results of this comparison are presented in **Table 3**. Screening values were not available for the following analytes that were detected at concentrations above the reporting limits: sec-butylbenzene, tert-butylbenzene, chloroethane, and 1,2,4-trimethylbenzene.

The analytical results for benzene, ethylbenzene, MTBE, toluene, 1,3,5-trimethylbenzene, bis(2-ethylhexyl)phthalate, and phenol exceeded the respective groundwater screening criteria in one or more samples. The analytical results from these groundwater samples are shown on **Figure 4**.

These analytical results and extent of the dissolved phase plume are generally consistent with the results observed in the 4<sup>th</sup> quarter 2010. One exception to this was observed in the MW-6 well cluster. Benzene concentrations exceeded the screening criterion in wells MW-6A, -B, -C and -D. Benzene was not detected in samples from these wells in the 4<sup>th</sup> quarter 2010 (the first time these wells were sampled). This may be related to the loss of groundwater control at the WRR, however additional sampling events would be needed to establish a trend. As indicated by the contours on **Figure 3**, groundwater beneath the investigation area continues to be within the capture zone for WRR pumping.

URS conducted the interim groundwater monitoring, as required, for the 1<sup>st</sup> quarter 2011. The following conclusions are based on the data and information collected as part of this program.

- Groundwater analytical results and the areal extent of the dissolved-phase plume were generally consistent with the results of prior sampling events.
- COP continues to pump groundwater production wells near the west fenceline at the highest rates feasible. As a result, groundwater beneath the subject investigation area is within the capture zone of these production wells.
- LNAPL was observed in the ROST-4-PZ piezometer this quarter. A plan was submitted to IEPA on March 14, 2011 and implementation of this plan began at the end of 1<sup>st</sup> quarter 2011.

The monitoring wells sampled during the 1<sup>st</sup> quarter will continue to be gauged and sampled quarterly. The 2<sup>nd</sup> quarter report will also include additional items requested by the Agency (e.g., isoconcentration maps, etc).

- Illinois Environmental Protection Agency (IEPA), 2010; (IEPA 2010); *Letter providing approval with comments the SOPUS 2010 Delineation Report*. Issued to Shell Oil Products US (SOPUS), dated August 5, 2010.
- URS Corporation (URS), 2011 (URS, 2011a); *Groundwater Flow Control Notification letter*. Issued to IEPA, dated February 4, 2011.
- URS Corporation (URS), 2011 (URS, 2011b); *Notification of Free Product Observation letter*. Issued to IEPA, dated February 7, 2011.
- URS Corporation (URS), 2011 (URS, 2011c); *30-Day Report for Groundwater Flow Control*; dated March 4, 2011.
- URS Corporation (URS), 2011 (URS, 2011d); *Additional Information regarding the 2/7/11 Notification of Free Product letter*. Issued to IEPA, dated March 14, 2011.
- URS Corporation (URS), 2010 (URS, 2010a); *Route 111/Rand Avenue Vicinity Investigation Health and Safety Plan – Roxana, Illinois*; dated August 2010.
- URS Corporation (URS), 2010 (URS, 2010b); *ConocoPhillips Environmental and Geotechnical Work 2010 Health and Safety Plan – WRB Refining LLC Wood River Refinery*; dated March 2010.
- US Environmental Protection Agency (USEPA), 2008; *Contract Laboratory Program National Functional Guidelines for Organic Methods Data Review*



**TABLE 1  
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
<b>MW-1</b> Screened Interval Elevation: 399.45 - 384.45									
4Q10	442.86	11/12/2010	NE	36.91	NA	NA	NA	405.95	*
1Q11	442.86	1/13/2011	NE	37.58	NA	NA	NA	405.28	*
<b>MW-2</b> Screened Interval Elevation: 396.74 - 381.74									
4Q10	443.93	11/12/2010	NE	38.12	NA	NA	NA	405.81	*
1Q11	443.93	1/13/2011	NE	38.67	NA	NA	NA	405.26	*
<b>MW-3</b> Screened Interval Elevation: 399.38 - 384.38									
4Q10	430.36	11/12/2010	NE	24.05	NA	NA	NA	406.31	*
1Q11	430.36	1/13/2011	NE	24.92	NA	NA	NA	405.44	*
<b>MW-4</b> Screened Interval Elevation: 398.95 - 383.95									
4Q10	441.58	11/12/2010	NE	35.38	NA	NA	NA	406.20	*
1Q11	441.58	1/13/2011	NE	36.04	NA	NA	NA	405.54	*
<b>MW-5</b> Screened Interval Elevation: 398.60 - 383.60									
4Q10	429.73	11/12/2010	NE	23.32	NA	NA	NA	406.41	*
1Q11	429.73	1/13/2011	NE	24.15	NA	NA	NA	405.58	*
<b>MW-6A</b> Screened Interval Elevation: 400.11 - 385.44									
4Q10	432.42	11/12/2010	NE	25.62	NA	NA	NA	406.80	*
1Q11	432.42	1/13/2011	NE	26.36	NA	NA	NA	406.06	*
<b>MW-6B</b> Screened Interval Elevation: 368.24 - 363.24									
4Q10	432.29	11/12/2010	NE	25.47	NA	NA	NA	406.82	*
1Q11	432.29	1/13/2011	NE	26.21	NA	NA	NA	406.08	*
<b>MW-6C</b> Screened Interval Elevation: 347.16 - 342.16									
4Q10	432.11	11/12/2010	NE	25.25	NA	NA	NA	406.86	*
1Q11	432.11	1/13/2011	NE	25.97	NA	NA	NA	406.14	*
<b>MW-6D</b> Screened Interval Elevation: 327.27 - 322.27									
4Q10	431.99	11/12/2010	NE	25.13	NA	NA	NA	406.86	*
1Q11	431.99	1/13/2011	NE	25.87	NA	NA	NA	406.12	*
<b>MW-7</b> Screened Interval Elevation: 400.18 - 390.18									
4Q10	443.10	11/12/2010	NE	36.93	NA	NA	NA	406.17	*
1Q11	443.10	1/13/2011	NE	37.52	NA	NA	NA	405.58	*
<b>MW-8</b> Screened Interval Elevation: 400.51 - 390.51									
4Q10	434.11	11/12/2010	NE	27.84	NA	NA	NA	406.27	*
1Q11	434.11	1/13/2011	NE	28.59	NA	NA	NA	405.52	*
<b>MW-9</b> Screened Interval Elevation: 398.75 - 388.75									
4Q10	445.20	11/12/2010	NE	39.00	NA	NA	NA	406.2	*
1Q11	445.20	1/13/2011	NE	39.62	NA	NA	NA	405.58	*
<b>MW-10</b> Screened Interval Elevation: 400.60 - 390.60									
4Q10	445.03	11/12/2010	NE	38.97	NA	NA	NA	406.06	*
1Q11	445.03	1/13/2011	NE	39.40	NA	NA	NA	405.63	*
<b>MW-11</b> Screened Interval Elevation: 400.67 - 390.67									
4Q10	442.33	11/12/2010	NE	36.39	NA	NA	NA	405.94	*
1Q11	442.33	1/13/2011	NE	37.15	NA	NA	NA	405.18	*
<b>MW-12</b> Screened Interval Elevation: 400.68 - 390.68									
4Q10	442.60	11/12/2010	NE	36.63	NA	NA	NA	405.97	*
1Q11	442.60	1/13/2011	NE	37.42	NA	NA	NA	405.18	*

**TABLE 1  
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
<b>MW-13</b> Screened Interval Elevation: 405.22 - 395.22									
4Q10	NI	11/12/2010	NI	NI	NI	NI	NI	NI	Well not installed during gauging event.
1Q11	430.27	1/13/2011	NE	24.28	NA	NA	NA	405.99	*
<b>P-54</b> Screened Interval Elevation: 404.18 - 397.18									
4Q10	442.18	11/12/2010	NE	36.43	NA	NA	NA	405.75	*
1Q11	442.18	1/13/2011	NE	37.24	NA	NA	NA	404.94	*
<b>P-60</b> Screened Interval Elevation: 398.61 - 378.61									
4Q10	446.57	11/11/2010	41.40	41.44	405.13	405.17	0.04	405.16	*
1Q11	446.57	1/14/2011	41.68	41.72	404.85	404.89	0.04	404.88	*
<b>P-60-11</b> Screened Interval Elevation: 413.53 - 383.53									
4Q10	446.18	11/11/2010	NE	40.91	NA	NA	NA	405.27	
1Q11	446.18	1/14/2011	NE	41.14	NA	NA	NA	405.04	
<b>P-93A</b> Screened Interval Elevation: 398.41 - 383.41									
4Q10	446.58	11/11/2010	NE	40.75	NA	NA	NA	405.83	*
1Q11	446.58	1/14/2011	NE	40.97	NA	NA	NA	405.61	*
<b>P-93B</b> Screened Interval Elevation: 372.44 - 370.44									
4Q10	446.46	11/11/2010	NE	40.73	NA	NA	NA	405.73	*
1Q11	446.46	1/14/2011	NE	41.03	NA	NA	NA	405.43	*
<b>P-93C</b> Screened Interval Elevation: 352.26 - 350.26									
4Q10	446.51	11/11/2010	NE	40.69	NA	NA	NA	405.82	*
1Q11	446.51	1/14/2011	NE	40.91	NA	NA	NA	405.60	*
<b>P-93D</b> Screened Interval Elevation: 320.92 - 318.92									
4Q10	446.36	11/11/2010	NE	40.59	NA	NA	NA	405.77	*
1Q11	446.36	1/14/2011	NE	40.81	NA	NA	NA	405.55	*
<b>GP-9-PZ</b> Screened Interval Elevation: 404.81 - 394.81									
4Q10	442.41	11/11/2010	NE	37.38	NA	NA	NA	405.03	*
1Q11	442.41	1/14/2011	NE	37.53	NA	NA	NA	404.88	*
<b>P-60-12S</b> Screened Interval Elevation: 429.49 - 419.49									
4Q10	443.33	11/11/2010	NE	23.36	NA	NA	NA	419.97	
1Q11	443.33	1/14/2011	NE	NE	NA	NA	NA	NA	
<b>P-60-12</b> Screened Interval Elevation: 383.31 - 373.31									
4Q10	443.31	11/11/2010	NE	38.19	NA	NA	NA	405.12	*
1Q11	443.31	1/14/2011	NE	38.51	NA	NA	NA	404.80	*
<b>P-60-13S</b> Screened Interval Elevation: 432.39 - 422.39									
4Q10	442.39	11/11/2010	NE	13.36	NA	NA	NA	429.03	
1Q11	442.39	1/14/2011	NE	NE	NA	NA	NA	NA	
<b>P-60-13</b> Screened Interval Elevation: 402.43 - 382.43									
4Q10	442.43	11/11/2010	37.50	37.87	404.56	404.93	0.37	404.83	*
1Q11	442.43	1/14/2011	37.73	37.74	404.69	404.70	0.01	404.70	*
<b>ROST-3-PZ</b> Screened Interval Elevation: 402.29 - 392.29									
4Q10	442.29	11/12/2010	NE	36.60	NA	NA	NA	405.69	*
1Q11	442.29	1/13/2011	NE	37.29	NA	NA	NA	405.00	*
<b>ROST-4-PZ</b> Screened Interval Elevation: 404.27 - 394.27									
4Q10	442.27	11/12/2010	NE	36.48	NA	NA	NA	405.79	*
1Q11	442.27	1/13/2011	NE	36.97	NA	NA	NA	405.30	*



**TABLE 1  
CUMULATIVE GROUNDWATER GAUGING RESULTS**

WELL ID / QUARTER	TOP OF CASING (ft MSL)	DATE GAUGED	DEPTH TO PRODUCT (ft)	DEPTH TO WATER (Static)	WATER-PRODUCT INTERFACE (ft MSL)	PRODUCT ELEV. (ft MSL)	PRODUCT THICKNESS (ft)	CORRECTED W.L. ELEVATION (ft MSL)	COMMENTS
<b>ROST-5-PZ</b> Screened Interval Elevation: 429.02 - 419.02									
4Q10	442.22	11/12/2010	NE	NE	NA	NA	NA	NA	
1Q11	442.22	1/13/2011	NE	NE	NA	NA	NA	NA	
<b>ROST-7-PZ</b> Screened Interval Elevation: 422.19 - 412.19									
4Q10	442.19	11/12/2010	NE	22.93	NA	NA	NA	419.26	
1Q11	442.19	1/13/2011	NE	23.74	NA	NA	NA	418.45	
<b>ROST-10-PZ</b> Screened Interval Elevation: 434.51 - 424.51									
4Q10	444.51	11/12/2010	NE	NE	NA	NA	NA	NA	
1Q11	444.51	1/13/2011	NE	NE	NA	NA	NA	NA	
<b>ROST-21-PZ</b> Screened Interval Elevation: 433.72 - 423.72									
4Q10	443.72	11/12/2010	NE	19.30	NA	NA	NA	424.42	
1Q11	443.72	1/13/2011	NE	19.59	NA	NA	NA	424.13	

**NOTES:**

- 1) The Corrected W.L. Elevations presented in this table were corrected by a specific gravity of 0.74 for the wells in which product was identified.
- 2) Elevations presented in this table are relative to the 1988 USGS datum.
- 3) **NA** = Not Applicable; **NE** = Not Encountered; **NM** = Not Measured; **NI** = Not Installed
- 4) \* Indicates that the product and/or water level is above the top of the screened zone of the well.

**TABLE 2  
SUMMARY OF CUMULATIVE GROUNDWATER FIELD PARAMETERS**

Well ID	Depth to Water (ft btoc)	pH	Temp (C)	Specific Cond (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (Mv)	General Notes
<b>MW-1</b>								
4Q10	36.98	8.04	20.53	1.449	3.9	8.99	93	
1Q11	37.35	6.76	5.93	1.189	1.0	0.08	102	
<b>MW-2</b>								
4Q10	38.27	7.24	18.38	1.066	41.0	8.90	-113	
1Q11	38.26	6.72	15.19	2.048	8.0	0.97	-69	
<b>MW-3</b>								
4Q10	24.11	6.88	21.59	1.157	6.5	0.32	-146.0	
1Q11	24.77	6.88	731.00	2.349	2.0	0.26	-89.0	
<b>MW-4</b>								
4Q10	35.91	6.76	19.51	0.854	7.7	4.88	-59.0	
1Q11	38.89	6.83	10.24	2.352	9.6	0.86	-51.0	
<b>MW-5</b>								
4Q10	23.32	6.77	19.39	0.801	2.9	0.17	-112.0	
1Q11	24.06	6.82	9.51	2.051	2.8	0.95	-66	
<b>MW-6A</b>								
4Q10	25.57	6.74	21.87	1.535	5.4	0.01	-127.0	
1Q11	26.40	6.80	10.99	2.274	7.4	0.34	-75.0	
<b>MW-6B</b>								
4Q10	25.37	6.80	17.14	1.113	17.5	0.14	-77.0	
1Q11	26.23	6.73	15.90	2.138	1.4	0.22	-46.0	
<b>MW-6C</b>								
4Q10	25.12	6.86	17.87	1.132	5.5	0.16	-104.0	
1Q11	26.07	6.87	13.90	0.981	4.2	0.13	-66.0	
<b>MW-6D</b>								
4Q10	25.06	6.94	17.42	1.342	5.90	0.05	-112	
1Q11	26.01	7.05	13.66	1.330	1.30	0.14	-74	
<b>MW-7</b>								
4Q10	37.12	6.48	17.80	1.097	59.9	0.05	-32	
1Q11	37.58	6.53	14.40	1.869	3.2	0.74	-6	
<b>MW-8</b>								
4Q10	28.04	6.41	17.17	1.133	61.5	0.04	-54	
1Q11	28.70	6.37	16.21	2.065	18.0	0.80	-14	
<b>MW-9</b>								
4Q10	39.05	6.72	16.98	0.919	48.3	1.72	-45	
1Q11	39.65	6.73	12.97	1.524	17.2	0.03	-34	
<b>MW-10</b>								
4Q10	39.01	6.72	18.75	1.284	35.0	0.64	-78	
1Q11	39.38	6.72	13.08	1.344	4.3	0.35	-48	
<b>MW-11</b>								
4Q10	36.75	6.59	15.28	1.023	25.5	0.01	-76.0	
1Q11	37.24	6.59	14.34	1.276	8.8	0.05	-59.0	
<b>MW-12</b>								
4Q10	36.76	6.72	14.87	1.328	62.4	0.45	212.0	
1Q11	37.49	6.66	14.98	1.196	9.2	0.16	159.0	
<b>MW-13</b>								
4Q10	NI	NI	NI	NI	NI	NI	NI	Well not installed during sampling event.
1Q11	24.55	6.52	17.78	1.379	19.2	0.10	-82.0	

**TABLE 2**  
**SUMMARY OF CUMULATIVE GROUNDWATER FIELD PARAMETERS**

Well ID	Depth to Water (ft btoc)	pH	Temp (C)	Specific Cond (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (Mv)	General Notes
<b>P-54</b>								
4Q10	36.66	6.71	14.70	0.870	68.6	1.74	140.0	
1Q11	37.32	6.69	14.47	0.970	25.4	1.29	56.0	
<b>P-93A</b>								
4Q10	40.48	6.81	17.70	1.259	23.0	NM	NM	
1Q11	41.22	6.68	16.16	2.517	12.8	NM	NM	
<b>P-93B</b>								
4Q10	40.53	7.10	18.10	1.150	0.0	NM	NM	
1Q11	41.27	6.69	16.44	1.377	1.2	NM	NM	
<b>P-93C</b>								
4Q10	40.42	7.28	17.50	1.057	0.0	NM	NM	
1Q11	41.16	7.14	16.51	1.832	0.5	NM	NM	
<b>P-93D</b>								
4Q10	40.34	7.13	18.50	1.211	0.0	NM	NM	
1Q11	41.07	NM	NM	NM	NM	NM	NM	

**NOTES:**

- 1) Field parameters were collected using the Troll 9500 except at P-93(A-D) where the Oakton pH/Con10 and LaMotte Turbidimeter were used.
- 2) NM = Not Measured; NI = Not Installed

**TABLE 3  
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL DETECTIONS AND EXCEEDANCES**

					VOCs														
Screening Values (mg/L)					6.3	0.005	0.35 *				0.005	0.1		0.0002		0.7	0.007 *	0.7 *	
Location	Sample ID	Sample Date	Depth to Water (ft btoc)	Product Thickness (ft)	ANALYTICAL RESULTS (mg/L)														
					Acetone	Benzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Carbon tetrachloride	Chlorobenzene	Chloroethane	Chloroform	Chloromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	p-Isopropyltoluene	
MW-01	MW-1-111110	11/11/2010	36.91	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	
	MW-1-111110-Dup	11/11/2010			<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005
	MW1-ROX-011711	1/17/2011	37.58	NE	<0.039 U	<0.0005	<0.005	<0.005	<0.005	<0.01	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-02	MW-2-111010	11/11/2010	38.12	NE	<0.5	0.401	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.025	<0.05	0.641	<0.025	0.0236 J	<0.025	
	MW2-ROX-011711	1/17/2011	38.67	NE	<0.005	0.294	0.0078	0.0047 J	<0.005	<0.001	<0.001	0.0077	<0.001	0.0019 J	0.74	<0.005	0.0617	0.0032 J	
MW-03	MW-3-111210	11/12/2010	24.05	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	0.0016 J	<0.005	
	MW3-ROX-011811	1/18/2011	24.92	NE	<0.005	0.00056	<0.005	<0.005	<0.005	<0.001	<0.001	0.00077 J	<0.001	0.00082 J	0.00082 J	<0.005	<0.005	<0.005	
MW-04	MW-4-111210	11/12/2010	35.38	NE	<0.1	0.0752	<0.005	0.001 J	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	0.00271 J	<0.005	
	MW4-ROX-011811	1/18/2011	36.04	NE	<0.005	0.0567	0.0006 J	0.00063 J	0.00069 J	<0.001	<0.001	0.00096 J	<0.001	<0.002	<0.001	<0.005	0.002 J	<0.005	
MW-05	MW-5-111210	11/12/2010	23.32	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	
	MW5-ROX-011811	1/18/2011	24.15	NE	<0.0344 U	0.0048	<0.005	<0.005	0.0014 J	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-06A	MW-6A-110910	11/9/2010	25.62	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	
	MW6A-ROX-011911	1/19/2011	26.36	NE	<0.0135 U	0.0113	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002 UJ	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-06B	MW-6B-111610	11/16/2010	25.47	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	
	MW6B-ROX-011911	1/19/2011	26.21	NE	<0.005	0.0082	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
	MW6B-ROX-011911-DUP	1/19/2011			<0.005	0.0082	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	0.0014 J	<0.005	<0.005	
MW-06C	MW-6C-111610	11/16/2010	25.25	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005		
	MW6C-ROX-012111	1/21/2011	25.97	NE	<0.005	0.0085	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-06D	MW-6D-111610	11/16/2010	25.13	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005	
	MW6D-ROX-012111	1/21/2011	25.87	NE	<0.005	0.0104	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-07	MW-7-111710	11/17/2010	36.93	NE	<25	928 D	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25	<1.25	<1.25	<1.25	
	MW-7-111710-Dup	11/17/2010			<25	876 D	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25	<1.25	<1.25	
	MW7-ROX-012511	1/25/2011			37.52	NE	<0.005 UJ	1150 J	0.0015 J J	0.0011 J J	0.0012 J J	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	0.0325 J	<0.005 UJ	0.004 J J
MW-08	MW-8-111710	11/17/2010	27.84	NE	<25	965 D	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<2.5	<1.25	<1.25	<1.25	<1.25	
	MW8-ROX-012511	1/25/2011	28.59	NE	<0.0469 U	986	0.0021 J J	0.0014 J J	<0.005 UJ	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	0.234 J	<0.005 UJ	0.0104 J	0.0012 J J	
	MW8-ROX-012511-DUP	1/25/2011			<0.0403 U	1030	0.002 J J	0.0014 J J	0.0011 J J	<0.001 UJ	<0.001 UJ	<0.002 UJ	<0.001 UJ	<0.002 UJ	0.237 J	<0.005 UJ	0.0105 J	0.001 J J	
MW-09	MW-9-111510	11/15/2010	39.00	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005		
	MW9-ROX-012111	1/21/2011	39.62	NE	<0.005	0.0037	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-10	MW-10-111010	11/10/2010	38.97	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005		
	MW10-ROX-012411	1/24/2011	39.40	NE	<0.0122 U	<0.0005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW10-ROX-012411-DUP	1/24/2011	<0.005			<0.0005	<0.005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-11	MW-11-111710	11/17/2010	36.39	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005		
	MW11-ROX-012411	1/24/2011	37.15	NE	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-12	MW-12-111510	11/15/2010	36.63	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	0.00161 J	<0.01	<0.005	<0.005	<0.005	<0.005	
	MW12-ROX-012411	1/24/2011	37.42	NE	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
MW-13	NI	4Q10	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	
	MW13-ROX-012511	1/25/2011	24.28	NE	<0.005	<0.0005	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
P-54	P-54-111710	11/17/2010	36.43	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005		
	P54-ROX-012411	1/24/2011	37.24	NE	<0.0048 U	<0.00039 U	<0.005	<0.005	<0.005	<0.001	<0.001	<0.002	<0.001	<0.002	<0.001	<0.005	<0.005	<0.005	
P-93A	P93A-102610	10/26/2010	40.75	NE	<25	422 D	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<2.5	0.32 J	<1.25	<1.25	<1.25	
	P93A-ROX_012611	1/26/2011	40.97	NE	<0.005	491	0.0059	0.0096	0.0213	0.00081 J	0.00061 J	<0.002	<0.001	<0.002	0.373	0.0016 J	0.0225	0.0047 J	
P-93B	P93B-102610	10/26/2010	40.73	NE	<10	189 D	<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<1	<0.5	<0.5	<0.5	<0.5	
	P93B-ROX_012611	1/26/2011	41.03	NE	<0.005	105	<0.005	<0.005	0.00058 J	<0.001	<0.001	0.00077 J	<0.001	0.0014 J	0.0104	<0.005	0.0108	<0.005	
P-93C	P93C-102610	10/26/2010	40.69	NE	<0.1	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	
	P93C-ROX_012611	1/26/2011	40.91	NE	<0.005	86.5	<0.005	<0.005	0.00056 J	<0.001	<0.001	<0.002	<0.001	<0.002	0.0175	<0.005	0.0019 J	<0.005	
P-93D	P93D-102610	10/26/2010	40.59	NE	<0.1	0.0429	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	
	NS	1Q11	40.81	NE	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	

**TABLE 3  
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL DETECTIONS AND EXCEEDANCES**

			VOC										SVOCs					
			Methyl tert-Butyl Ether (MTBE)	n-Propylbenzene	Toluene	1,2,3-Trichlorobenzene	1,2,4-Trichlorobenzene	1,1,2-Trichloroethane	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	m,p-Xylene	o-Xylenes	Benzoic Acid	Diethyl phthalate	Di-n-butyl phthalate	Di-n-octyl phthalate	2,4-Dimethylphenol	Bis(2-Ethylhexyl)phthalate
			0.07	0.7 *	1	0.0056 *	0.07	0.005		0.07 *	10		28	5.6		0.14	0.14	0.006
Location	Sample ID	Sample Date	ANALYTICAL RESULTS (mg/L)															
MW-01	MW-1-111110	11/11/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01
	MW-1-111110-Dup	11/11/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.049	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW1-ROX-011711	1/17/2011	0.0032	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.001	0.0013	<0.013	<0.0063	<0.0063	<0.0063	<0.013	<0.013	<0.0025
MW-02	MW-2-111010	11/11/2010	<0.025	0.0354	1.22 D	<0.025	<0.025	<0.025	0.273	0.0618	1.14	0.318	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01
	MW2-ROX-011711	1/17/2011	<0.001	0.0652	0.737	<0.005	<0.005	<0.001	0.279	0.0744	0.892	0.191	0.0082 J	<0.0048	<0.0048	<0.0048	0.0022 J	0.025
MW-03	MW-3-111210	11/12/2010	<0.005	0.00622	0.00257 J	<0.005	<0.005	<0.005	<0.005	<0.005	0.00653 J	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01
	MW3-ROX-011811	1/18/2011	0.0021	<0.005	<0.001	<0.005	<0.005	<0.001	0.00085 J	<0.005	0.0012	0.0014	<0.011	<0.0053	<0.0053	<0.0053	<0.011	0.00062 J
MW-04	MW-4-111210	11/12/2010	0.00508	0.00395 J	0.0157	<0.005	<0.005	<0.005	<0.005	<0.005	0.00699 J	0.00139 J	<0.047	<0.009	<0.009	<0.009	<0.009	<0.005
	MW4-ROX-011811	1/18/2011	0.007	0.0022 J	0.0071	<0.005	<0.005	<0.001	<0.005	<0.005	0.0062	0.0021	<0.01	<0.0052	<0.0052	<0.0052	<0.01	<0.0021
MW-05	MW-5-111210	11/12/2010	0.00556	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00277 J	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW5-ROX-011811	1/18/2011	0.0066	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	0.00087 J	0.0014	<0.011	0.0009 J	<0.0053	<0.0053	<0.011	<0.0021
MW-06A	MW-6A-110910	11/9/2010	0.0203	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6A-ROX-011911	1/19/2011	0.0181	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	0.0044 J	<0.0019 U	0.00081 J	<0.005	<0.01	<0.002
MW-06B	MW-6B-111610	11/16/2010	0.00204 J	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6B-ROX-011911	1/19/2011	0.0016	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01 UJ	<0.00087 U	<0.005	<0.005	<0.01	<0.002
	MW6B-ROX-011911-DUP	1/19/2011	0.0016	<0.005	<0.001	0.0016 J	0.0011 J	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01 UJ	<0.001 U	<0.0051	<0.0051	<0.01	<0.002
MW-06C	MW-6C-111610	11/16/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.05	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6C-ROX-012111	1/21/2011	0.0021	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.011 UJ	<0.00084 U	<0.0053	<0.0053	<0.011	<0.0021
MW-06D	MW-6D-111610	11/16/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.051	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW6D-ROX-012111	1/21/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.011 UJ	<0.001 U	0.00071 J	<0.0053	<0.011	<0.0021
MW-07	MW-7-111710	11/17/2010	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<0.048	<0.01	<0.01	<0.01	<0.01	<0.005 U
	MW-7-111710-Dup	11/17/2010	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<0.05	<0.01	<0.01	<0.01	<0.01	<0.007 U
	MW7-ROX-012511	1/25/2011	<0.0057 U	0.0058 J	0.0907 J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.0552 J	0.0133 J	0.0694 J	0.0235 J	<0.011	<0.003 U	<0.0053	<0.0053	<0.011	<0.0021
MW-08	MW-8-111710	11/17/2010	<1.25	<1.25	0.328 J	<1.25	<1.25	<1.25	<1.25	<1.25	<2.5	<1.25	<0.048	<0.01	<0.01	<0.01	0.018	<0.006 U
	MW8-ROX-012511	1/25/2011	0.21 J	0.0173 J	1.2 E J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.109 J	0.0332 J	0.499 J	0.188 J	<0.01	<0.0025 U	<0.005	0.0004 J	0.0233	0.00086 J
	MW8-ROX-012511-DUP	1/25/2011	0.205 J	0.017 J	1.12 E J	<0.005 UJ	<0.005 UJ	<0.001 UJ	0.11 J	0.0336 J	0.518 J	0.191 J	<0.011	0.0125	<0.0057	<0.0057	0.0299	0.0012 J
MW-09	MW-9-111510	11/15/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.001 U
	MW9-ROX-012111	1/21/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.011 UJ	<0.001 U	0.00064 J	<0.0053	<0.011	<0.0021
MW-10	MW-10-111010	11/10/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	MW10-ROX-012411	1/24/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01	<0.001 U	<0.0051	<0.0051	<0.01	0.00068 J
MW-11	MW10-ROX-012411-DUP	1/24/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01	<0.0012 U	<0.005	<0.005	<0.001	<0.0071 J
	MW-11-111710	11/17/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.003 U
MW-12	MW11-ROX-012411	1/24/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01	<0.001 U	<0.0052	<0.0052	<0.01	0.00073 J
	MW-12-111510	11/15/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.003 U
MW-13	MW12-ROX-012411	1/24/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01	<0.00077 U	<0.005	<0.005	<0.01	<0.002
	NI	4Q10	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI	NI
P-54	MW13-ROX-012511	1/25/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01	<0.0027 U	<0.0052	<0.0052	<0.01	<0.0021
	P-54-111710	11/17/2010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.003 U
P-93A	P54-ROX-012411	1/24/2011	<0.001	<0.005	<0.001	<0.005	<0.005	<0.001	<0.005	<0.005	<0.001	<0.001	<0.01	<0.002 U	<0.005	<0.005	<0.01	<0.002
	P93A-102610	10/26/2010	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	<1.25	0.543 J	<1.25	<0.047	<0.009	<0.009	<0.009	<0.009	<0.009
P-93B	P93A-ROX_012611	1/26/2011	0.124	0.0254	0.0654	0.0026 J	0.0015 J	0.0017	0.21	0.045	0.622	0.0705	<0.0098 UJ	<0.0014 U	<0.0049	<0.0049	<0.0098	<0.002
	P93B-102610	10/26/2010	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.047	<0.009	<0.009	<0.009	<0.009	<0.009
P-93C	P93B-ROX_012611	1/26/2011	0.0088	0.011	0.0321	<0.005	<0.005	<0.001	0.0052	0.0016 J	0.0555	0.0092	<0.011 UJ	<0.00086 U	<0.0053	<0.0053	<0.011	<0.0021
	P93C-102610	10/26/2010	0.00136 J	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.047	<0.009	<0.009	<0.009	<0.009	<0.009	<0.001 U
P-93D	P93C-ROX_012611	1/26/2011	0.0014	0.0013 J	0.0067	<0.005	<0.005	<0.001	0.0025 J	<0.005	0.0051	0.0035	<0.01 UJ	<0.00097 U	<0.0051	<0.0051	<0.01	<0.002
	P93D-102610	10/26/2010	0.0122	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.048	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	NS	1Q11	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS

**TABLE 3  
SUMMARY OF GROUNDWATER MONITORING WELL ANALYTICAL DETECTIONS AND EXCEEDANCES**

			SVOC								
			Fluorene	2-Methylnaphthalene	2-Methylphenol (o-Cresol)	3 & 4-Methylphenol (m & p-Cresol)	Naphthalene	3-Nitroaniline	Phenanthrene	Phenol	Pyrene
			0.28	0.028 *	0.35	0.35&0.7 *	0.14		0.21 *	0.1	0.21
Location	Sample ID	Sample Date	ANALYTICAL RESULTS (mg/L)								
MW-01	MW-1-111110	11/11/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW-1-111110-Dup	11/11/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW1-ROX-011711	1/17/2011	<0.0063	<0.0063	<0.013	<0.013	<0.0063	<0.013	<0.0063	<0.0063	<0.0063
MW-02	MW-2-111010	11/11/2010	<0.01	0.014	<0.01	0.007 J	0.077	<0.019	<0.01	0.006 J	<0.01
	MW2-ROX-011711	1/17/2011	<0.0048	0.0065	0.0028 J	0.0035 J	0.0312	<0.0095	<0.0048	<0.0048	<0.0048
MW-03	MW-3-111210	11/12/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW3-ROX-011811	1/18/2011	<0.0053	<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053	<0.0053	<0.0053
MW-04	MW-4-111210	11/12/2010	<0.009	<0.009	<0.009	<0.009	<0.009	<0.019	<0.009	<0.009	<0.009
	MW4-ROX-011811	1/18/2011	<0.0052	<0.0052	<0.01	<0.01	<0.0052	<0.01	<0.0052	<0.0052	<0.0052
MW-05	MW-5-111210	11/12/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW5-ROX-011811	1/18/2011	<0.0053	<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053	<0.0053	<0.0053
MW-06A	MW-6A-110910	11/9/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW6A-ROX-011911	1/19/2011	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005
MW-06B	MW-6B-111610	11/16/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	MW6B-ROX-011911	1/19/2011	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005
	MW6B-ROX-011911-DUP	1/19/2011	<0.0051	<0.0051	<0.01	<0.01	<0.0051	<0.01	<0.0051	<0.0051	<0.0051
MW-06C	MW-6C-111610	11/16/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	MW6C-ROX-012111	1/21/2011	<0.0053	<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053	<0.0053	<0.0053
MW-06D	MW-6D-111610	11/16/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01
	MW6D-ROX-012111	1/21/2011	<0.0053	<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053	<0.0053	<0.0053
MW-07	MW-7-111710	11/17/2010	<0.01	<0.01	<0.01	<0.01	0.004 J	<0.019	<0.01	0.034	<0.01
	MW-7-111710-Dup	11/17/2010	<0.01	<0.01	<0.01	<0.01	0.005 J	<0.02	<0.01	0.032	<0.01
	MW7-ROX-012511	1/25/2011	<0.0053	0.0023 J	<0.011	0.00099 J	0.0058	<0.011	<0.0053	0.0737	<0.0053
MW-08	MW-8-111710	11/17/2010	<0.01	0.005 J	<0.01	0.023	0.023	<0.019	<0.01	0.053	<0.01
	MW8-ROX-012511	1/25/2011	<0.005	0.0069	0.0195	0.0502	0.026	<0.01	<0.005	0.119 J	<0.005
	MW8-ROX-012511-DUP	1/25/2011	<0.0057	0.0075	0.0228	0.0587	0.0288	<0.011	<0.0057	0.171 J	<0.0057
MW-09	MW-9-111510	11/15/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW9-ROX-012111	1/21/2011	<0.0053	<0.0053	<0.011	<0.011	<0.0053	<0.011	<0.0053	<0.0053	<0.0053
MW-10	MW-10-111010	11/10/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW10-ROX-012411	1/24/2011	<0.0051	<0.0051	<0.01	<0.01	<0.0051	<0.01	<0.0051	<0.0051	<0.0051
	MW10-ROX-012411-DUP	1/24/2011	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005
MW-11	MW-11-111710	11/17/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW11-ROX-012411	1/24/2011	<0.0052	<0.0052	<0.01	<0.01	<0.0052	<0.01	<0.0052	<0.0052	<0.0052
MW-12	MW-12-111510	11/15/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	MW12-ROX-012411	1/24/2011	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005
MW-13	NI	4Q10	NI	NI	NI	NI	NI	NI	NI	NI	NI
	MW13-ROX-012511	1/25/2011	0.00044 J	0.0021 J	<0.01	<0.01	<0.0052	<0.01	0.0012 J	<0.0052	0.00032 J
P-54	P-54-111710	11/17/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	P54-ROX-012411	1/24/2011	<0.005	<0.005	<0.01	<0.01	<0.005	<0.01	<0.005	<0.005	<0.005
P-93A	P93A-102610	10/26/2010	<0.009	0.023	<0.009	<0.009	0.095 D	<0.019	<0.009	0.31 D J	<0.009
	P93A-ROX_012611	1/26/2011	0.00032 J	0.0254	<0.0098	0.064	0.0803	<0.0098 UJ	0.0004 J	0.172	<0.0049
P-93B	P93B-102610	10/26/2010	<0.009	<0.009	<0.009	<0.009	<0.009	<0.019	<0.009	0.094	<0.009
	P93B-ROX_012611	1/26/2011	<0.0053	<0.0053	<0.011	<0.011	0.0011 J	0.00069 J J	<0.0053	0.106	<0.0053
P-93C	P93C-102610	10/26/2010	<0.009	<0.009	<0.009	<0.009	<0.009	<0.019	<0.009	<0.009	<0.009
	P93C-ROX_012611	1/26/2011	<0.0051	<0.0051	<0.01	<0.01	<0.0051	<0.01 UJ	<0.0051	0.0166	<0.0051
P-93D	P93D-102610	10/26/2010	<0.01	<0.01	<0.01	<0.01	<0.01	<0.019	<0.01	<0.01	<0.01
	NS	1Q11	NS	NS	NS	NS	NS	NS	NS	NS	NS

**NOTES:**

- 1) Analytical results screened to the Illinois Tiered Approach to Corrective Action Objectives (TACO), 35 IAC Part 742, and Groundwater Remediation Objectives for Chemicals not listed in TACO (\*).
- 2) "< ##" denotes that the analytical constituent was not detected at the indicated reporting limit.
- 3) NE = Not Encountered; NI = Not Installed; NS = Not Sampled
- 4) Xenco Laboratories was used during 4Q10. Accutest was used starting in 1Q11.

Exceedances of the screening criteria are highlighted in yellow above.

**LABORATORY QUALIFIERS:**

- D = The result is from a diluted sample
- J = The analyte was detected below the reporting limit. Result is estimated.

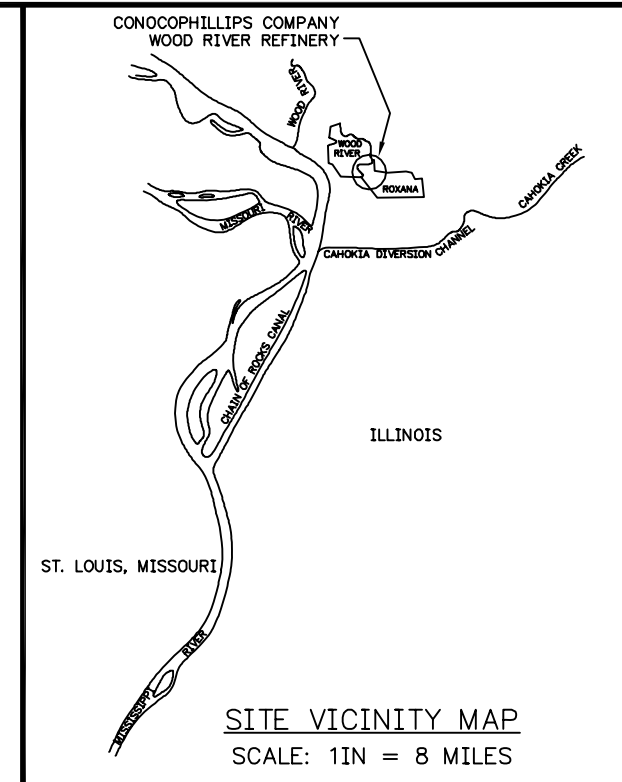
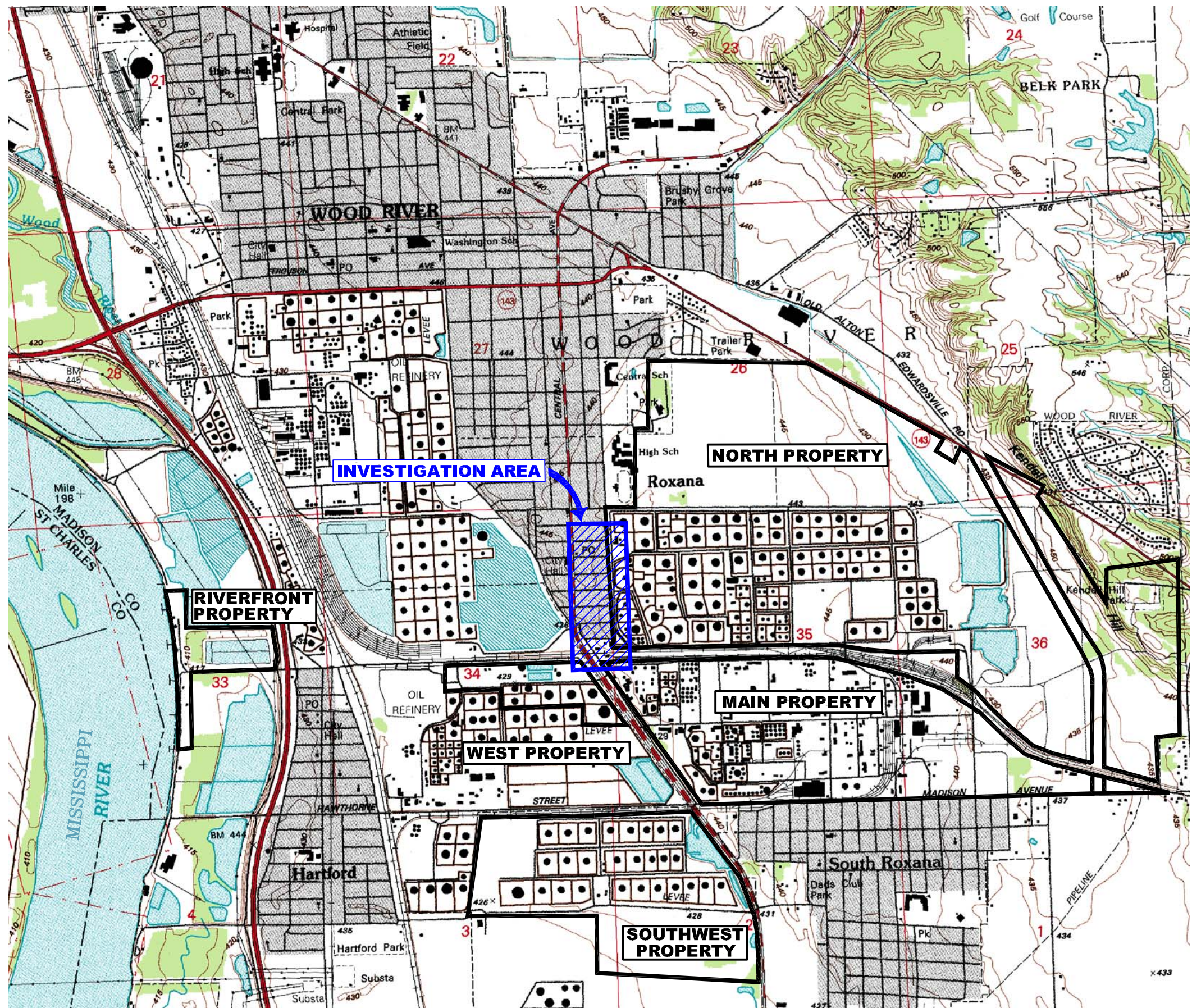
**URS QUALIFIERS:**

- J = The results is estimated
- UJ = Estimated nondetect
- U = Result is non-detect.





P:\ENVIRONMENTAL\SHELL\_OIL\_PRODUCT\_US-B-ROXANA-ROUTE\_111\2156XXXX-ROXANA\_INVESTIGATION & ASSESSMENT\QUARTERLY\_GW\_2011\1ST QUARTER 2011 FIGURES\FIGURE 1 INVESTIGATION AREA LOCATION MAP.DWG Last edited: 04/08/11 1:11 p.m. © WCC-ST.LOUIS



**LEGEND**  
 — WOOD RIVER REFINERY PROPERTY BOUNDARY  
 ▨ INVESTIGATION AREA




SOURCE: MAP TAKEN FROM ELECTRONIC USGS DIGITAL RASTER GRAPHIC 7.5 MINUTE TOPOGRAPHIC MAP OF WOOD RIVER, ILL-MO REVISED 1994.

CONTOUR INTERVAL = 5 FT  
 0 2000  
 SCALE FEET

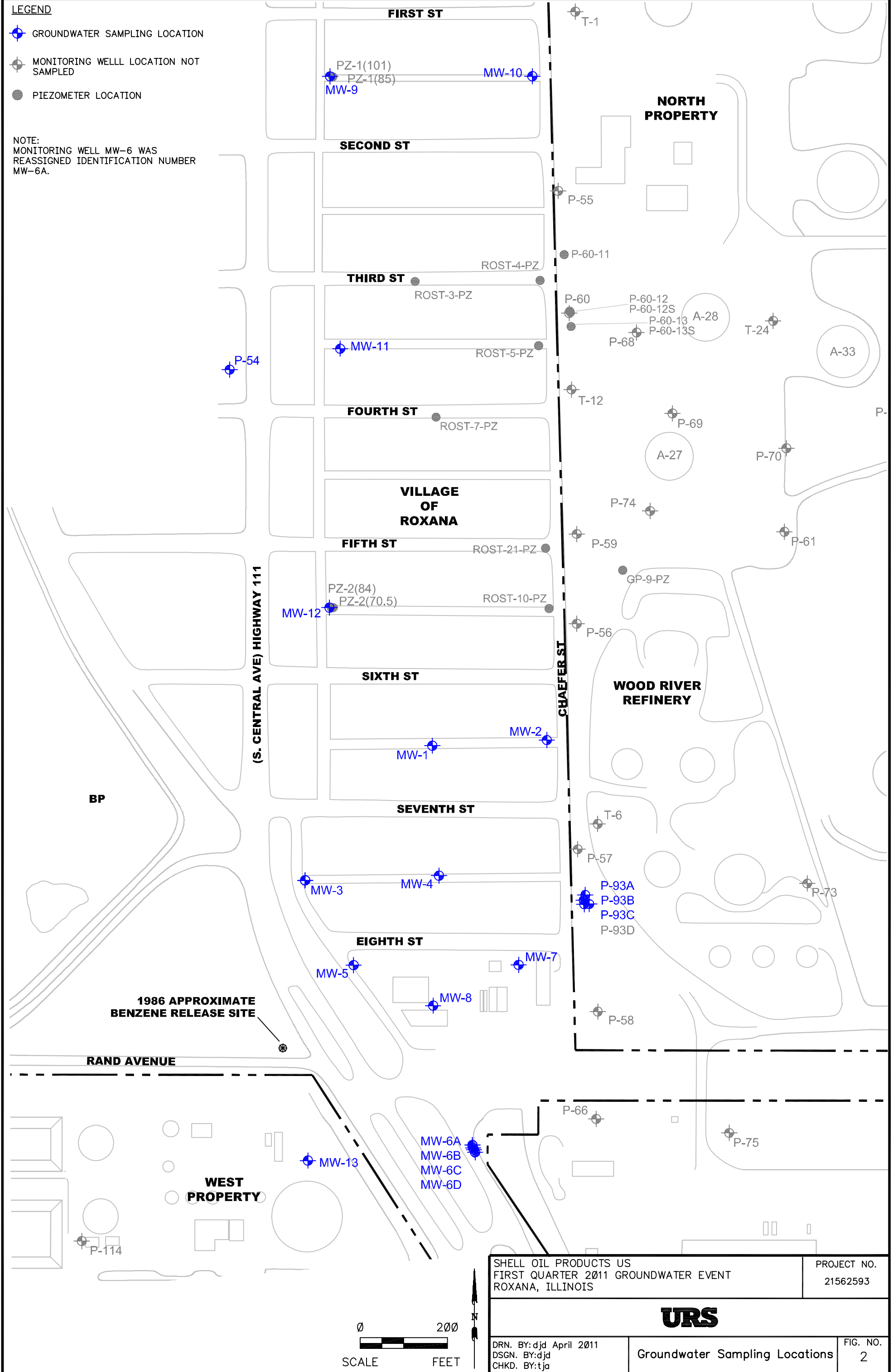
SHELL OIL PRODUCTS US FIRST QUARTER 2011 GROUNDWATER EVENT ROXANA, ILLINOIS	PROJECT NO. 21562593
<b>URS</b>	
DRN. BY: djd April 2011 DSGN. BY: djd CHKD. BY: wmp	Investigation Area Location Map FIG. NO. 1



**LEGEND**

-  GROUNDWATER SAMPLING LOCATION
-  MONITORING WELL LOCATION NOT SAMPLED
-  PIEZOMETER LOCATION

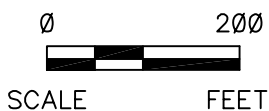
NOTE:  
MONITORING WELL MW-6 WAS  
REASSIGNED IDENTIFICATION NUMBER  
MW-6A.



SHELL OIL PRODUCTS US FIRST QUARTER 2011 GROUNDWATER EVENT ROXANA, ILLINOIS	PROJECT NO. 21562593
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DRN. BY:djd April 2011 DSGN. BY:djd CHKD. BY:tja	Groundwater Sampling Locations	FIG. NO. 2
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**NOTES:**

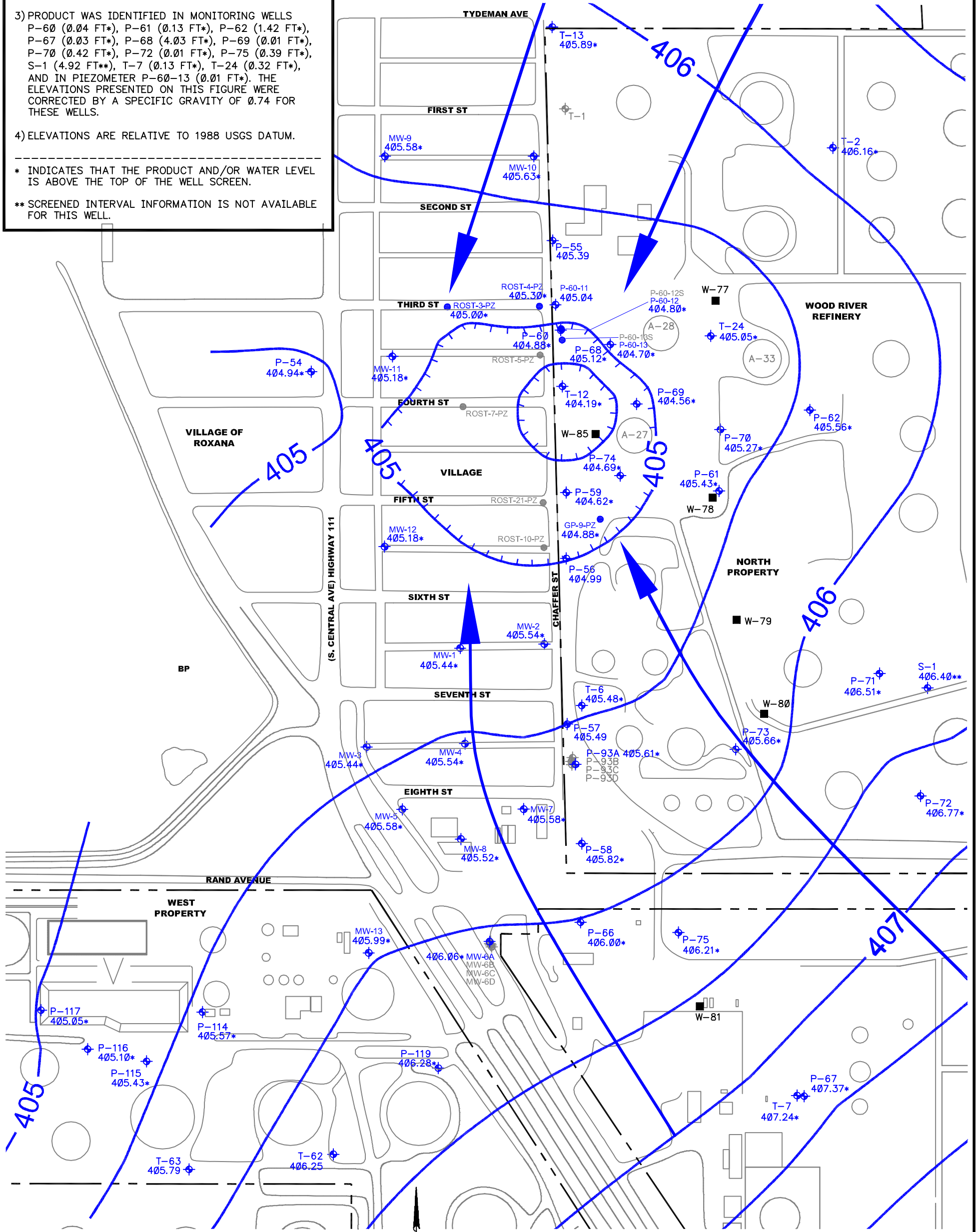
- 1) WATER LEVELS WERE OBTAINED DURING THE FIRST QUARTER 2010 GAUGING EVENT ON JANUARY 13-14 AND 20, 2011.
- 2) CONTOUR LINES PRIMARILY GENERATED BY SURFER VERSION 8 MODELING OF GROUNDWATER ELEVATIONS. SOME INTERPRETATION WAS DONE UTILITZING PROFESSIONAL JUDGMENT AND CONTOUR LINES WERE MODIFIED BY HAND.
- 3) PRODUCT WAS IDENTIFIED IN MONITORING WELLS P-60 (0.04 FT\*), P-61 (0.13 FT\*), P-62 (1.42 FT\*), P-67 (0.03 FT\*), P-68 (4.03 FT\*), P-69 (0.01 FT\*), P-70 (0.42 FT\*), P-72 (0.01 FT\*), P-75 (0.39 FT\*), S-1 (4.92 FT\*\*), T-7 (0.13 FT\*), T-24 (0.32 FT\*), AND IN PIEZOMETER P-60-13 (0.01 FT\*). THE ELEVATIONS PRESENTED ON THIS FIGURE WERE CORRECTED BY A SPECIFIC GRAVITY OF 0.74 FOR THESE WELLS.
- 4) ELEVATIONS ARE RELATIVE TO 1988 USGS DATUM.

\* INDICATES THAT THE PRODUCT AND/OR WATER LEVEL IS ABOVE THE TOP OF THE WELL SCREEN.

\*\* SCREENED INTERVAL INFORMATION IS NOT AVAILABLE FOR THIS WELL.

**LEGEND**

- PIEZOMETER OR MONITORING WELL LOCATION GAUGED (USED FOR CONTOURING)
- PIEZOMETER OR MONITORING WELL LOCATION NOT USED FOR CONTOURING
- GROUNDWATER PRODUCTION WELL LOCATION
- 406 GROUNDWATER ELEVATION CONTOUR, 0.5 FOOT CONTOUR INTERVAL
- GROUNDWATER FLOW DIRECTION



SHELL OIL PRODUCTS US  
FIRST QUARTER 2011 GROUNDWATER EVENT  
ROXANA, ILLINOIS

PROJECT NO.  
21562593



DRN. BY: wmp April 2011  
DSGN. BY: wmp  
CHKD. BY: tj & b3

Groundwater Contours  
First Quarter 2011

FIG. NO.  
3



**LEGEND**

- GROUNDWATER MONITORING WELL LOCATION
- MONITORING WELL LOCATION (NOT SAMPLED)

**NOTES:**

1. THE ANALYTES LISTED IN THE BOXES ARE THOSE WITH CONCENTRATIONS THAT EXCEEDED THE INDICATED SCREENING CRITERIA IN THE 1Q11 AND OR 4Q10 SAMPLING EVENTS.
2. SCREENING CRITERIA TAKEN FROM ILLINOIS TIERED APPROACH TO CORRECTIVE ACTION OBJECTIVES (TACO), 35 IAC PART 742.
  - INDICATES AN EXCEEDANCE OF THE GROUNDWATER CLASS I SCREENING CRITERIA.
3. LABORATORY QUALIFIERS:
  - J = THE TARGET ANALYTE WAS DETECTED BELOW THE REPORTING LIMIT AND THE RESULT IS ESTIMATED.
  - E = THE VALUE EXCEEDS CALIBRATION RANGE.
  - UJ = ESTIMATED NON DETECT AT THE REPORTING LIMIT INDICATED.
4. ON 01/26/11, P-93D WAS DETERMINED TO BE COMPROMISED. A REPLACEMENT WELL WITH THE SAME IDENTIFICATION NUMBER WAS INSTALLED IN MARCH 2011 AND WILL BE SAMPLED IN 2Q11.

Analyte	Screening Criteria (mg/L)
Benzene	0.005
Chloroform	0.0002
Ethylbenzene	0.7
MTBE	0.07
Toluene	1
1,3,5-Trimethylbenzene	0.07
bis(2-Ethylhexyl)phthalate	0.006
Phenol	0.1

Sample Location	MW-9
Sampled 01/21/11	Result (mg/L)
Benzene	0.0037
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	<0.001
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.0021
Phenol	<0.0053

Sample Location	MW-10
Sampled 01/24/11	Result (mg/L)
Benzene	<0.005/<0.005
Chloroform	<0.001/<0.001
Ethylbenzene	<0.001/<0.001
MTBE	<0.001/<0.001
Toluene	<0.001/<0.001
1,3,5-Trimethylbenzene	<0.005/<0.005
bis(2-Ethylhexyl)phthalate	0.00068 J/0.00071 J
Phenol	<0.0051/<0.005

Sample Location	MW-11
Sampled 01/24/11	Result (mg/L)
Benzene	<0.005
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	<0.001
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	0.00073 J
Phenol	<0.0052

Sample Location	MW-1
Sampled 01/17/11	Result (mg/L)
Benzene	<0.0005
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	0.0032
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.0025
Phenol	<0.0063

Sample Location	MW-2
Sampled 01/17/11	Result (mg/L)
Benzene	0.294
Chloroform	<0.001
Ethylbenzene	0.74
MTBE	<0.001
Toluene	0.737
1,3,5-Trimethylbenzene	0.0744
bis(2-Ethylhexyl)phthalate	0.25
Phenol	<0.0048

Sample Location	P93A	P93B	P93C
Sampled 01/26/11	Result (mg/L)	Result (mg/L)	Result (mg/L)
Benzene	491	105	86.5
Chloroform	<0.001	<0.001	<0.001
Ethylbenzene	0.373	0.0104	0.0175
MTBE	0.124	0.0088	0.0014
Toluene	0.0654	0.0321	0.0067
1,3,5-Trimethylbenzene	0.045	0.0016 J	<0.005
bis(2-Ethylhexyl)phthalate	<0.002	<0.0021	<0.002
Phenol	0.172	0.106	0.0166

Sample Location	MW-7
Sampled 01/25/11	Result (mg/L)
Benzene	1150 J
Chloroform	<0.001 UJ
Ethylbenzene	0.0325 J
MTBE	<0.0057
Toluene	0.0907 J
1,3,5-Trimethylbenzene	0.0133 J
bis(2-Ethylhexyl)phthalate	<0.0021
Phenol	0.0737

Sample Location	MW-6A	MW-6B	MW-6C	MW-6D
Sampled 01/19/11	Result (mg/L)	Result (mg/L)	Result (mg/L)	Result (mg/L)
Benzene	0.0113	0.0082/0.0082	0.0085	0.0104
Chloroform	<0.001	<0.001/<0.001	<0.001	<0.001
Ethylbenzene	<0.001	<0.001/<0.001	<0.001	<0.001
MTBE	0.0181	0.0016/0.0016	0.0021	<0.001
Toluene	<0.001	<0.001/<0.001	<0.001	<0.001
1,3,5-Trimethylbenzene	<0.005	<0.005/<0.005	<0.005	<0.005
bis(2-Ethylhexyl)phthalate	<0.002	<0.002/<0.002	<0.0021	<0.0021
Phenol	<0.005	<0.005/<0.0051	<0.0053	<0.0053

Sample Location	MW-5
Sampled 01/18/11	Result (mg/L)
Benzene	0.0048
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	0.0066
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.0021
Phenol	<0.0053

Sample Location	MW-3
Sampled 01/18/11	Result (mg/L)
Benzene	0.00056
Chloroform	<0.001
Ethylbenzene	0.00082 J
MTBE	0.0021
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	0.00062 J
Phenol	<0.0053

Sample Location	P-54
Sampled 01/24/11	Result (mg/L)
Benzene	<0.00039
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	<0.001
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.002
Phenol	<0.005

Sample Location	MW-12
Sampled 01/24/11	Result (mg/L)
Benzene	<0.005
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	<0.001
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.002
Phenol	<0.005

Sample Location	MW-4
Sampled 01/18/11	Result (mg/L)
Benzene	0.0567
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	0.007
Toluene	0.0071
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.0021
Phenol	0.0052

Sample Location	MW-8
Sampled 01/25/11	Result (mg/L)
Benzene	986/1030
Chloroform	<0.001 UJ/<0.001 UJ
Ethylbenzene	0.234 J/0.237 J
MTBE	0.21 J/0.205 J
Toluene	1.2 E J/1.12 E J
1,3,5-Trimethylbenzene	0.0332 J/0.0336 J
bis(2-Ethylhexyl)phthalate	0.00086 J/0.0012 J
Phenol	0.119 J/0.171 J

Sample Location	MW-13
Sampled 01/25/11	Result (mg/L)
Benzene	<0.005
Chloroform	<0.001
Ethylbenzene	<0.001
MTBE	<0.001
Toluene	<0.001
1,3,5-Trimethylbenzene	<0.005
bis(2-Ethylhexyl)phthalate	<0.0021
Phenol	<0.0052

(S. CENTRAL AVE) HIGHWAY 111

CHAEFER ST

WOOD RIVER REFINERY

WEST PROPERTY

SHELL OIL PRODUCTS US  
FIRST QUARTER 2011 GROUNDWATER EVENT  
ROXANA, ILLINOIS

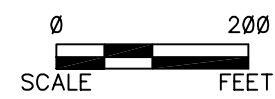
PROJECT NO.  
21562593



DRN. BY:djd April 2011  
DSGN. BY:kh  
CHKD. BY:tja

1Q11 Groundwater Monitoring Well  
Analytical Results Summary

FIG. NO.  
4









LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: K. Hurst / N. Satam

DATE: 1/17/11 WEATHER: Cloudy, 46°F

MONITORING WELL ID: MW-2 SAMPLE ID: MW2-Rov-011711

INITIAL DATA

Well Diameter: 1 in  
 Total Well Depth (btoc): 62.19 ft  
 Depth to Water (btoc): 38.26 ft  
 Depth to LNAPL/DNAPL (btoc): - ft  
 Depth to Top of Screen (btoc): 47.19 ft  
 Screen Length: 15 ft

Water Column Height (do not include LNAPL or DNAPL): 23.93 ft btoc  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 54.69 ft btoc  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0.0 ppi  
 Wellbore PID/FID Reading: 730 ppb

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1545	NM	clear	hydrocarbon	6.72	8.68	6.72	12.7	2.01	-41
800	1553				6.69	11.62	1.463	13.9	1.38	-46
1600	1601				6.67	13.69	1.607	11.7	0.75	-55
2400	1609				6.66	14.50	1.746	10.8	0.56	-62
3200	1617				6.66	14.97	1.914	12.6	0.68	-69
4000	1625				6.69	15.06	1.972	13.6	0.80	-70
4800	1633				6.70	15.14	2.052	10.3	0.93	-71
5600	1641				6.71	15.16	2.124	8.3	0.99	-71
6400	1649				6.72	15.19	2.048	8.0	0.97	-69

Start Time: 1545 Elapsed Time (min): 64 min Water Quality Meter ID: TROLL 9500

Stop Time: 1649 Average Purge Rate (mL/min): 100 mL/min Date Calibrated: 1/17/11

SAMPLING DATA

Sample Date: 1/17/11 Sample Time: 1655 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 100 mL/min QA/QC Samples: None

VOA Vials, No Headspace  Initials: KH

COMMENTS: Post DTW - 38.26ft No draw down - sampling

Total Purge Volume: 6400 mL



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW

PROJECT NUMBER: 21562593.00003

FIELD PERSONNEL: A. Huff | N. Salem

DATE: 1/18/11

WEATHER: N 35° F, Overcast

MONITORING WELL ID: MW-3

SAMPLE ID: MW3-ROX - 011810

INITIAL DATA

Well Diameter: 1 in  
 Total Well Depth (btoc): 45.98 ft  
 Depth to Water (btoc): 21.77 ft  
 Depth to LNAPL/DNAPL (btoc): - ft  
 Depth to Top of Screen (btoc): 30.98 ft  
 Screen Length: 15 ft

Water Column Height (do not include LNAPL or DNAPL): 21.21 ft btoc  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 38.48 ft btoc  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0.0 ppb  
 Wellbore PID/FID Reading: 2.6 ppb

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	0920	NM	Clear	hydrocarbon	6.94	8.10	6.94	21	0.25	-7
800	0928				6.89	8.55	1.861	14.6	0.30	-71
1600	0936				6.87	8.77	1.988	9.0	0.32	-61
2400	0942				6.86	8.51	2.070	7.9	0.32	-70
3200	0950				6.86	8.52	2.167	4.9	0.30	-79
4000	0956				6.87	8.47	2.204	4.5	0.29	-82
4800	1006				6.89	8.615	2.260	4.3	0.70	-83
5600	1012				6.89	6.64	2.294	4.7	0.56	-83
6400	1020				6.88	6.92	2.307	4.0	0.47	-83
7200	1028				6.88	7.30	2.330	2.4	0.33	-86
8000	1036				6.88	7.48	2.342	2.1	0.29	-87
8800	1044				6.88	7.31	2.349	2.0	0.26	-89

Start Time: 0920

Elapsed Time (min): 84 min

Water Quality Meter ID: TROLL 9500

Stop Time: 1044

Average Purge Rate (mL/min): 100 mL

Date Calibrated: 1/18/11

SAMPLING DATA

Sample Date: 1/18/11

Sample Time: 1050

Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow

Sample Flow Rate (mL/min): 100 mL/min

QA/QC Samples: None

VOA Vials, No Headspace  Initials: KH

COMMENTS:

1000 - Begins to snow  
last sampling water level reading - 2483 ft

Total Purge Volume: 8800 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: N. Sabam / R. Hunt

DATE: 1/18/11 WEATHER: ~40°F, Overcast

MONITORING WELL ID: MW-4 SAMPLE ID: MW4-ROX-011811

INITIAL DATA

Well Diameter: 1 in  
 Total Well Depth (btoc): 57.63 ft  
 Depth to Water (btoc): 38.89 ft  
 Depth to LNAPL/DNAPL (btoc): — ft  
 Depth to Top of Screen (btoc): 42.63 ft  
 Screen Length: 15 ft

Water Column Height (do not include LNAPL or DNAPL): 50.13 ft btoc  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = — ft btoc  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = — ft btoc  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoc

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0 ppb  
 Wellbore PID/FID Reading: 3.6 ppb

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	<u>1445</u>	<u>NM</u>	<u>Clear</u>	<u>hydrocarbon</u>	<u>6.99</u>	<u>8.82</u>	<u>2.056</u>	<u>14.1</u>	<u>4.08</u>	<u>-7</u>
800	<u>1453</u>				<u>6.99</u>	<u>9.43</u>	<u>2.133</u>	<u>12.1</u>	<u>9.09</u>	<u>-15</u>
1600	<u>1301</u>				<u>6.86</u>	<u>10.07</u>	<u>2.277</u>	<u>7.7</u>	<u>1.57</u>	<u>-22</u>
2400	<u>1309</u>				<u>6.84</u>	<u>10.21</u>	<u>2.325</u>	<u>6.6</u>	<u>1.09</u>	<u>-41</u>
3200	<u>1317</u>				<u>6.83</u>	<u>10.28</u>	<u>2.334</u>	<u>8.6</u>	<u>0.95</u>	<u>-44</u>
4000	<u>1325</u>				<u>6.83</u>	<u>10.19</u>	<u>2.348</u>	<u>9.2</u>	<u>0.89</u>	<u>-48</u>
4800	<u>1333</u>				<u>6.83</u>	<u>10.24</u>	<u>2.352</u>	<u>9.6</u>	<u>0.86</u>	<u>-51</u>

Start Time: 1445 Elapsed Time (min): 50 min Water Quality Meter ID: TROLL 9500

Stop Time: 1335 Average Purge Rate (mL/min): 100 mL/min Date Calibrated: 1/18/11

SAMPLING DATA

Sample Date: 1/18/11 Sample Time: 1335 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 100 mL/min QA/QC Samples: —

VOA Vials, No Headspace  Initials: KH

COMMENTS:

Depth to water post sampling - 38.90

Total Purge Volume: 4800 mL









**LOW FLOW GROUNDWATER SAMPLING DATA SHEET**

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: K. Hersh / N. Setam

DATE: 1/19/11 WEATHER: Partly Cloudy, 29°F

MONITORING WELL ID: MW-6B SAMPLE ID: ~~MW-6B-20110119~~ MW-6B-ROX-011911

**INITIAL DATA**

Well Diameter: 2 in  
 Total Well Depth (btoc): 69.38 ft  
 Depth to Water (btoc): 26.23 ft  
 Depth to LNAPL/DNAPL (btoc): - ft  
 Depth to Top of Screen (btoc): 64.05 ft  
 Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 43.15 ft btoc  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 66.83 ft btoc  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0.0 ppi  
 Wellbore PID/FID Reading: 29.9 pp

**PURGE DATA**

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1350	26.30	Clear	None	7.10	15.76	1.930	13.9	1.16	31
800	1354	↓	↓	↓	6.97	16.18	2.043	4.7	0.44	-10
1600	1358	↓	↓	↓	6.95	16.22	2.085	2.5	0.37	-23
2400	1402	↓	↓	↓	6.93	16.05	2.114	1.6	0.30	-32
3200	1406	↓	↓	↓	6.93	16.07	2.128	1.1	0.25	-39
4000	1410	↓	↓	↓	6.73	15.90	2.133	1.4	0.22	-46

Start Time: 1350 Elapsed Time (min): 20 min Water Quality Meter ID: TROLL 9500  
 Stop Time: 1410 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 1/19/11

**SAMPLING DATA**

Sample Date: 1/19/11 Sample Time: 1415 Lab Analysis: VOC, SVOC  
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: MW-6B-ROX-011911 Dup  
 VOA Vials, No Headspace  Initials: KH

**COMMENTS:**

\_\_\_\_\_

Total Purge Volume: 4000 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: N. Satom / K. Huest

DATE: 1/21/11 WEATHER: N GF overcast

MONITORING WELL ID: MW-6C SAMPLE ID: MW6C-01211

INITIAL DATA

Well Diameter: 2 in  
 Total Well Depth (btoc): 90.28 ft  
 Depth to Water (btoc): 26.07 ft  
 Depth to LNAPL/DNAPL (btoc): - ft  
 Depth to Top of Screen (btoc): 84.95 ft  
 Screen Length: 5 ft

Water Column Height (do not include LNAPL or DNAPL): 74.21 - 82.45 ft btoC  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 82.95 ft btoC  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoC  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoC

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0 ppi  
 Wellbore PID/FID Reading: 7.0 pp

PURGE DATA Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	09:50	26.07	Clear	Hydrocarbon	7.01	12.98	1.044	22.0	-0.17	-18
600	09:54	↓	↓	↓	6.91	13.73	0.981	16.70	-0.12	-41
1600	09:58	26.07	↓	↓	6.88	13.86	0.976	9.5	-0.12	-50
2400	10:02	↓	↓	↓	6.85	13.72	0.979	5.3	-0.13	-63
3200	10:06	26.02	↓	↓	6.87	13.90	0.981	4.2	-0.13	-66

Start Time: 1010 Elapsed Time (min): 30 Water Quality Meter ID: TROLL 9500

Stop Time: 1010 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 1/21/11

SAMPLING DATA

Sample Date: 1/21/11 Sample Time: 1010 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: MW6C-Rox - 01/21/11 EB

VOA Vials, No Headspace  Initials: NS

COMMENTS:

\_\_\_\_\_

Total Purge Volume: 3200 mL





LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: N. satam / K. Huot.

DATE: 1/25/11 WEATHER: N 30°F, Overcast

MONITORING WELL ID: MW-7 SAMPLE ID: MW7-Rox-012511

INITIAL DATA

Well Diameter: 2 in  
 Total Well Depth (btoc): 52.92 ft  
 Depth to Water (btoc): 37.58 ft  
 Depth to LNAPL/DNAPL (btoc):      ft  
 Depth to Top of Screen (btoc): 42.92 ft  
 Screen Length: 10 ft

Water Column Height (do not include LNAPL or DNAPL): 25.34 ft btoc  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 47.92 ft btoc  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) =      ft btoc  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft =      ft btoc

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 3.2 ppb  
 Wellbore PID/FID Reading: 620 pp

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1414	37.52	Clear	Hydrocarbon	6.56	13.97	1.946	9.7	0.88	27
800	1418	37.52	↓	↓	6.54	14.43	1.969	6.6	0.64	19
1600	1422	↓	↓	↓	6.53	14.48	1.927	5.2	0.68	9
2400	1426	↓	↓	↓	6.53	14.54	1.898	4.5	0.66	4
3200	1430	↓	↓	↓	6.53	14.38	1.880	3.6	0.70	-2
4000	1434	↓	↓	↓	6.53	14.40	1.869	3.2	0.74	-6
4800	1438	↓	↓	↓						

Start Time: 1414 Elapsed Time (min): 25 Water Quality Meter ID: TROLL 9500  
 Stop Time: 1435 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 1/25/11

SAMPLING DATA

Sample Date: 1/25/11 Sample Time: 1435 Lab Analysis: VOC, SVOC  
 Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 QA/QC Samples:       
 VOA Vials, No Headspace  Initials: KH

COMMENTS:

Total Purge Volume: 1600 mL





LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW

PROJECT NUMBER: 21562593.00003

FIELD PERSONNEL: N. Satam / K. Huest

DATE: 1/25/11

WEATHER: N30F Sunny

MONITORING WELL ID: MW-8

SAMPLE ID: MW8-ROX-012511

INITIAL DATA

Well Diameter: 2 in  
Total Well Depth (btoc): 43.60 ft  
Depth to Water (btoc): 28.70 ft  
Depth to LNAPL/DNAPL (btoc): - ft  
Depth to Top of Screen (btoc): 33.60 ft  
Screen Length: 10 ft

Water Column Height (do not include LNAPL or DNAPL): 15.9 ft btoc  
If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 28.60 ft btoc  
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc  
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

Volume of Flow Through Cell: 800 ml  
Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
Ambient PID/FID Reading: 0.0 ppi  
Wellbore PID/FID Reading: 802 pp

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1300	28.68	Cloudy	hydrocarbon	6.61	13.81	2.155	19.0	0.86	37
600	1304	28.68	↓	↓	6.40	15.35	2.165	39.0	0.53	1
1600	1308	↓	↓	↓	6.39	15.56	2.134	31	0.61	3
2400	1312	↓	↓	↓	6.38	15.89	2.094	25.5	0.70	-5
3200	1316	↓	↓	↓	6.32	16.02	2.082	22.0	0.72	-9
4000	1320	↓	↓	↓	6.32	16.19	2.068	20.0	0.77	-12
4600	1324	28.68	↓	↓	6.37	16.21	2.065	18.0	0.80	-14

Start Time: 1300

Elapsed Time (min): 25

Water Quality Meter ID: TROLL 9500

Stop Time: 1325

Average Purge Rate (mL/min): 200

Date Calibrated: 1/25/11

SAMPLING DATA

Sample Date: 1/25/11

Sample Time: 1325

Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow

Sample Flow Rate (mL/min): 200 mL/min

QA/QC Samples: MW8-ROX-012511 DUP

VOA Vials, No Headspace  Initials: NS

COMMENTS:

Total Purge Volume: 4800 mL

LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: N. Salame / K. Hunt

DATE: 1/21/11 WEATHER: N 6F, Sunny

MONITORING WELL ID: MW-9 SAMPLE ID: MW9-Rox-012111

INITIAL DATA

Well Diameter: 2 in  
 Total Well Depth (btoc): 56.78 ft  
 Depth to Water (btoc): 39.68 ft  
 Depth to LNAPL/DNAPL (btoc): — ft  
 Depth to Top of Screen (btoc): 46.45 ft  
 Screen Length: 10 ft

Water Column Height (do not include LNAPL or DNAPL): 9.80 ft btoe  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 41.45 ft btoe  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = — ft btoe  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = — ft btoe

Volume of Flow Through Cell: 60 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 1800 ml  
 Ambient PID/FID Reading: 0.0 ppb  
 Wellbore PID/FID Reading: 66 1.4 ppb

(K11)

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1305	39.68	Clear	hydrocarbon	6.83	12.49	1.233	4.4	0.26	-25
600	1309	↓	↓	↓	6.77	12.96	1.422	4.1	0.08	-27
1600	1313	↓	↓	↓	6.76	13.00	1.483	3.7	0.05	-28
2400	1317	↓	↓	↓	6.74	13.00	1.504	3.0	0.00	-31
3200	1321	↓	↓	↓	6.74	13.09	1.512	2.5	-0.01	-32
4000	1325	↓	clear	↓	6.74	12.87	1.519	18.6	-0.04	-33
4800	1329	↓	↓	↓	6.74	12.94	1.523	16.0	0.04	-33
5600	1333	↓	↓	↓	6.73	13.00	1.522	18.4	-0.03	-34
6400	1334	39.68	↓	↓	6.73	12.97	1.524	12.2	-0.03	-34

Start Time: 1305 Elapsed Time (min): 30 Water Quality Meter ID: TROLL 9500

Stop Time: 1333 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 1/21/11

SAMPLING DATA

Sample Date: 1/21/11 Sample Time: 1340 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: MW9-Rox-012111 MS (K11)  
MW9-Rox-012111 MSD

VOA Vials, No Headspace  Initials: NS

COMMENTS:

Total Purge Volume: 6400 mL





LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: R. Hesse / N. Sotom

DATE: 1/24/11 WEATHER: N30E, Sunny

MONITORING WELL ID: MW-10 11 SAMPLE ID: MW11-Rox-012411

INITIAL DATA  
 Well Diameter: 2 in 51.99 Water Column Height (do not include LNAPL or DNAPL): 7.52 14.75 ft btoc  
 Total Well Depth (btoc): 54.76 ~~54.76~~ If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet, (K4)  
 Depth to Water (btoc): 37.24 ft Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 44.76 46.99 ft btoc  
 Depth to LNAPL/DNAPL (btoc): - ft If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Depth to Top of Screen (btoc): 44.43 ft Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc  
 Screen Length: 10 ft 41.66 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc  
 Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0 ppb  
 Wellbore PID/FID Reading: 93.4 ppb  
17.3 (K4)

PURGE DATA Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	1104	37.24	Cloudy	hydrocarbon	6.83	12.22	0.783	29.3	1.09	1.01
800	1108	↓	↓	↓	6.67	13.31	1.249	25.6	0.320	-28
1600	1112	↓	↓	↓	6.63	13.88	1.316	20.4	0.110	-42
2400	1116	↓	↓	↓	6.62	14.08	1.322	17.4	0.030	-48
3200	1120	↓	↓	↓	6.60	14.25	1.309	12.6	-0.01	-54
4000	1124	↓	↓	↓	6.60	14.36	1.295	10.7	-0.03	-56
4800	1128	↓	↓	↓	6.59	14.34	1.276	8.8	-0.05	-57
	1132									

Start Time: 1104 Elapsed Time (min): 24 Water Quality Meter ID: TROLL 9500

Stop Time: 1128 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 1/24/11

SAMPLING DATA  
 Sample Date: 1/24/11 Sample Time: 1135 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: None

VOA Vials, No Headspace  Initials: KH

COMMENTS:

Total Purge Volume: 4800 mL



LOW FLOW GROUNDWATER SAMPLING DATA SHEET

PROJECT NAME: Roxana 1Q11 GW PROJECT NUMBER: 21562593.00003 FIELD PERSONNEL: K. Hurst / N Satam

DATE: 1/24/11 WEATHER: N 30°F, Overcast

MONITORING WELL ID: MW-12 SAMPLE ID: MW12-012411 = MW12-Rox-012411

INITIAL DATA

Well Diameter: 2 in  
 Total Well Depth (btoc): 52.25 ft  
 Depth to Water (btoc): 37.49 ft  
 Depth to LNAPL/DNAPL (btoc): - ft  
 Depth to Top of Screen (btoc): 41.92 ft  
 Screen Length: 10 ft

Water Column Height (do not include LNAPL or DNAPL): 14.76 ft btoc  
 If Depth to Top of Screen is > Depth to Water AND Screen Length is ≥ 4 feet,  
 Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 36.92 ft btoc  
 If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are ≥ 4ft,  
 Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc  
 If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

Volume of Flow Through Cell: 800 ml  
 Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml  
 Ambient PID/FID Reading: 0.0 ppb  
 Wellbore PID/FID Reading: 13.1 ppb

PURGE DATA

Pump Type: SS Bladder Pump

Purge Volume (mL)	Time	Depth to Water (ft)	Color	Odor	pH	Temp (°C)	Cond. (mS/cm)	Turbidity (NTUs)	DO (mg/L)	ORP (mV)
0	0920	37.49	Cloudy	hydrocarbon	6.72	14.32	1.732	6.2	-0.16	152
800	0922	37.47	Clear	↓	6.69	14.60	1.671	5.5	-0.16	153
1600	0928	37.47			6.66	14.89	1.488	6.0	-0.16	156
2400	0932	↓	↓	↓	6.66	14.95	1.434	12.02	-0.16	156
3200	0936	↓	↓	↓	6.66	14.90	1.365	11.4	-0.16	157
4000	0940	↓	↓	↓	6.66	14.95	1.290	10.2	-0.16	158
4800	0944	↓	↓	↓	6.66	15.01	1.197	9.6	-0.16	158
5600	0948	↓	↓	↓	6.66	15.02	1.088	9.5	-0.16	158
6400	0952	↓	↓	↓	6.66	14.95	1.197	9.5	-0.17	158
7200	0954	↓	↓	↓	6.66	14.98	1.196	9.2	-0.16	159

Start Time: 0920 Elapsed Time (min): 40 Water Quality Meter ID: TROLL 9500

Stop Time: 1000 Average Purge Rate (mL/min): 200 mL/min Date Calibrated: 1/25/11

SAMPLING DATA

Sample Date: 1/24/11 Sample Time: 1000 Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow Sample Flow Rate (mL/min): 200 mL/min QA/QC Samples: MW12-Rox-012411MS

VOA Vials, No Headspace  Initials: nb (K) MW12-Rox-012411MS0

COMMENTS:

Total Purge Volume: 8000 mL

PROJECT NAME: Roxana 1Q11 GW

PROJECT NUMBER: 21562593.00003

FIELD PERSONNEL: N. Sartin / K. Riest

DATE: 1/25/11

WEATHER: 20°F, overcast

MONITORING WELL ID: MW-13

SAMPLE ID: MW13-ROX-012511

INITIAL DATA

Well Diameter: 2 in
Total Well Depth (btoc): 35.82 ft
Depth to Water (btoc): 24.55 ft
Depth to LNAPL/DNAPL (btoc): - ft
Depth to Top of Screen (btoc): 25.57 ft
Screen Length: 10 ft

Water Column Height (do not include LNAPL or DNAPL): 11.27 ft btoc
If Depth to Top of Screen is > Depth to Water AND Screen Length is >= 4 feet,
Place Pump at: Total Well Depth - 0.5 (Screen Length + DNAPL Column Height) = 30.32 ft btoc
If Depth to Top of Screen is < Depth to Water AND Water Column Height and Screen Length are >= 4ft,
Place Pump at: Total Well Depth - (0.5 X Water Column Height + DNAPL Column Height) = - ft btoc
If Screen Length and/or water column height is < 4 ft, Place Pump at: Total Well Depth - 2 ft = - ft btoc

Volume of Flow Through Cell: 800 ml
Minimum Purge Volume = (3 x Flow Cell Volume): 2400 ml
Ambient PID/FID Reading: 0.0 ppb
Wellbore PID/FID Reading: 0.0 ppb

PURGE DATA

Pump Type: SS Bladder Pump

Table with 11 columns: Purge Volume (mL), Time, Depth to Water (ft), Color, Odor, pH, Temp (°C), Cond. (mS/cm), Turbidity (NTUs), DO (mg/L), ORP (mV). Rows show data from 0 to 11000 mL purge volume.

Start Time: 1004

Elapsed Time (min): 62 min

Water Quality Meter ID: TROLL 9500

Stop Time: 1106

Average Purge Rate (mL/min): 200 mL/min

Date Calibrated: 1/25/11

SAMPLING DATA

Sample Date: 1/25/11

Sample Time: 1110

Lab Analysis: VOC, SVOC

Sample Method: Bladder Pump / Low Flow

Sample Flow Rate (mL/min): 200 mL/min

QA/QC Samples: MW13-ROX-012511 EB

VOA Vials, No Headspace [X] Initials: KR

COMMENTS:

Total Purge Volume: 11800 mL







**ROXANA 1Q11 SAMPLING**

Well	Date	Well Diam. (Inches)	DTB (ft btoc)	DTW (ft btoc)	Packer Depth (ft btoc)	Ht of H2O (ft)	Well Volume (gal) <sup>2</sup>	Target Purge Volume (gal) <sup>3</sup>	Actual Purge Volume (gal)	Sample Time	pH	Temp (C)	Cond (mS/cm)	Turbidity (Ntu)	QA/QC or NOTES
NORTH PROPERTY															
P-93A	1/26	2	63.17	41.22	N/A	21.95	3.58	10.73	2012	159	6.68	14.16	2.517	12.8	<del>MS/MSD</del> (KIL)
P-93B	1/24	2	76.03	41.27	N/A	34.76	5.67	14.99	20	1055	6.49	16.44	1.377	1.2	MS/MSD
P-93C	1/26	2	96.28	41.16	80.30	8.99	2.08	26.9	27	1120	7.14	14.51	1.832	0.5	
P-93D	1/24	2	127.44	41.07	119.25	<del>26.9</del>	14.07	42.23	NS	NS	NS	NS	NS	NS	Well Compromised

**NOTES:**

- 1) Ht of H2O = DTB - DTW
- 2) Well Volume [for 2" wells] = Ht of H2O ( 0.163 gal/ft )
- 3) Purge Volume = 3 x Well Volume

~~26.9~~ (KIL) ~~42.23~~  
26.37





# Roxana Groundwater Quarterly – 1st Quarter 2011

Laboratory SDG: M97264

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 2/21/2011

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW1-ROX-011711	MW2-ROX-011711
MW3-ROX-011811	MW4-ROX-011811
MW5-ROX-011811	TB-ROX-011711

## 1.0 Data Package Completeness

*Were all items delivered as specified in the QAPP and COC as appropriate?*

Yes

## 2.0 Laboratory Case Narrative \ Cooler Receipt Form

*Were problems noted in the laboratory case narrative or cooler receipt form?*

Yes, the laboratory case narrative indicated SVOC LCS recovery was outside evaluation criteria for 4-chloroaniline. Although not indicated in the laboratory case narrative, methylene chloride was detected in the trip blank. Sample MW2-ROX-011711 was analyzed at dilution due to ethyl benzene and bis(2-ethylhexyl phthalate) having exceeded the calibration range of the instrument. The compounds ethyl benzene and bis(2-ethylhexyl phthalate) were reported from the second run; all other compounds were reported from the original analysis. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated that samples were received by the laboratory at 1.1°C which was outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required. The cooler receipt form erroneously indicated N/A for the quality control/preservation questions, trip blank present in cooler and trip blank listed on the COC. A trip blank was included in the cooler and was listed on the COC; URS instructed the laboratory to analyze the trip blank for VOCs.

## 3.0 Holding Times

*Were samples extracted/analyzed within applicable limits?*

Yes

## 4.0 Blank Contamination

*Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?*

Yes

Blank ID	Parameter	Analyte	Concentration/Amount
TB-ROX-011711	VOCs	Methylene chloride	0.86 µg/L

Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration did not require qualification. No qualification of data was required.

## 5.0 Laboratory Control Sample

*Were LCS recoveries within evaluation criteria?*

No

LCS ID	Parameter	Analyte	LCS Recovery	LCS Criteria
OP23913-BS	SVOCs	4-Chloroaniline	29	40-130

Analytical data that required qualification based on LCS data are included in the table below.

Field ID	Parameter	Analyte	Qualification
MW1-ROX-011711	SVOCs	4-Chloroaniline	UJ
MW2-ROX-011711	SVOCs	4-Chloroaniline	UJ
MW3-ROX-011711	SVOCs	4-Chloroaniline	UJ
MW4-ROX-011711	SVOCs	4-Chloroaniline	UJ
MW5-ROX-011711	SVOCs	4-Chloroaniline	UJ

## 6.0 Surrogate Recoveries

*Were surrogate recoveries within evaluation criteria?*

Yes

## 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

*Were MS/MSD samples analyzed as part of this SDG?*

No

## 8.0 Internal Standard (IS) Recoveries

*Were internal standard area recoveries within evaluation criteria?*

Yes

## 9.0 Laboratory Duplicate Results

*Were laboratory duplicate samples collected as part of this SDG?*

No

## 10.0 Field Duplicate Results

*Were field duplicate samples collected as part of this SDG?*

No

**11.0 Sample Dilutions**

*For samples that were diluted and nondetect, were undiluted results also reported?*

Not applicable; analytes were detected in samples that were diluted.

**12.0 Additional Qualifications**

*Were additional qualifications applied?*

Yes, professional judgment was used to qualify the common laboratory contaminant acetone reported at concentrations greater than two times (2X) the reporting limit (RL), since acetone is not representative of site conditions.

<b>Sample ID</b>	<b>Analyte</b>	<b>New RL</b>	<b>Qualification</b>	<b>Comment</b>
MW1-ROX-011711	Acetone	39.0	<b>U</b>	Professional Judgment
MW5-ROX-011811	Acetone	34.4	<b>U</b>	Professional Judgment



02/18/11

**Technical Report for**

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**Shell Oil**

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

SAP#340061

Accutest Job Number: M97264

Sampling Dates: 01/17/11 - 01/18/11

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Report to:

URS Corporation

Elizabeth\_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

*Reviewed  
2/21/2011*

Total number of pages in report: 58



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Reza Pand*  
Reza Pand  
Lab Director

Client Service contact: Kristen Blanchard 508-481-6200

Certifications: MA (M-MA136, SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.

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### Sample Summary

Shell Oil

Job No: M97264

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
M97264-1	01/17/11	12:25	NSKH 01/19/11	AQ	Ground Water	MW1-ROX-011711 ✓
M97264-2	01/17/11	16:55	NSKH 01/19/11	AQ	Ground Water	MW2-ROX-011711 ✓
M97264-3	01/18/11	10:50	NSKH 01/19/11	AQ	Ground Water	MW3-ROX-011811 ✓
M97264-4	01/18/11	13:35	NSKH 01/19/11	AQ	Ground Water ✓	MW4-ROX-011811 ✓
M97264-5	01/18/11	15:55	NSKH 01/19/11	AQ	Ground Water	MW5-ROX-011811 ✓
M97264-6	01/17/11	00:00	NSKH 01/19/11	AQ	Trip Blank Water	TB-ROX-011711 ✓

## SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil Job No M97264  
 Site: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL Report Date 2/4/2011 2:24:26 PM

5 Sample(s), 1 Trip Blank were collected on between 01/17/2011 and 01/18/2011 and were received at Accutest on 01/19/2011 properly preserved, at 1.8 Deg. C and intact. These Samples received an Accutest job number of M97264. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

Matrix	AQ	Batch ID:	MSE2163
--------	----	-----------	---------

- All samples were analyzed within the recommended method holding time.
- Sample(s) M97291-IMS, M97291-1MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- MS/MSD Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Outside control limits due to high level in sample relative to spike amount.
- Matrix Spike Duplicate Recovery(s) for Isopropylbenzene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- M97291-IMS for Dichlorodifluoromethane: Outside control limits due to possible matrix interference. Refer to Blank Spike.

Matrix	AQ	Batch ID:	MSE2165
--------	----	-----------	---------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M97309-5MS, M97309-5MSD were used as the QC samples indicated.
- MS/MSD Recovery(s) for m,p-Xylene, Toluene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

### Extractables by GCMS By Method SW846 8270C

Matrix	AQ	Batch ID:	OP23913
--------	----	-----------	---------

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M97236-IMS, M97236-1MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for 4-Chloroaniline are outside control limits. Blank Spike meets program technical requirements.
- OP23913-MS/MSD for 4-Chloroaniline: Outside control limits. Blank Spike meets program technical requirements.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M97264).



Sample Results

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Report of Analysis

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Report of Analysis

3.1  
3

Client Sample ID: MW1-ROX-011711	Date Sampled: 01/17/11
Lab Sample ID: M97264-1	Date Received: 01/19/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	E51217.D	1	01/24/11	TD	n/a	n/a	MSE2163

Run #1	Purge Volume
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	<del>39.0</del> ND <sup>39.0</sup>	5.0	4.6	ug/l	"U"
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.1  
3

Client Sample ID:	MW1-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-1	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	3.2	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	1.3	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		70-130%
2037-26-5	Toluene-D8	114%		70-130%
460-00-4	4-Bromofluorobenzene	109%		70-130%

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 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.1  
3

Client Sample ID:	MW1-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-1	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I70137.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
Run #2							

Run #	Initial Volume	Final Volume
Run #1	800 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	13	0.96	ug/l	
95-57-8	2-Chlorophenol	ND	6.3	0.85	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	13	0.72	ug/l	
120-83-2	2,4-Dichlorophenol	ND	13	0.87	ug/l	
105-67-9	2,4-Dimethylphenol	ND	13	2.7	ug/l	
51-28-5	2,4-Dinitrophenol	ND	25	3.1	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	13	6.3	ug/l	
95-48-7	2-Methylphenol	ND	13	0.60	ug/l	
	3&4-Methylphenol	ND	13	0.79	ug/l	
88-75-5	2-Nitrophenol	ND	13	0.82	ug/l	
100-02-7	4-Nitrophenol	ND	25	6.3	ug/l	
87-86-5	Pentachlorophenol	ND	13	4.1	ug/l	
108-95-2	Phenol	ND	6.3	2.6	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	13	0.50	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	13	0.47	ug/l	
83-32-9	Acenaphthene	ND	6.3	0.42	ug/l	
208-96-8	Acenaphthylene	ND	6.3	1.6	ug/l	
62-53-3	Aniline	ND	13	0.57	ug/l	
120-12-7	Anthracene	ND	6.3	0.34	ug/l	
56-55-3	Benzo(a)anthracene	ND	6.3	0.34	ug/l	
50-32-8	Benzo(a)pyrene	ND	6.3	0.28	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	6.3	0.34	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	6.3	0.77	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	6.3	0.37	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	6.3	0.40	ug/l	
85-68-7	Butyl benzyl phthalate	ND	6.3	0.51	ug/l	
91-58-7	2-Chloronaphthalene	ND	6.3	0.38	ug/l	
106-47-8	4-Chloroaniline	ND	13	0.72	ug/l	"UJ"
218-01-9	Chrysene	ND	6.3	0.28	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	6.3	0.44	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	6.3	0.29	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	6.3	0.26	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

*web*  
*2/2/11*

Report of Analysis



Client Sample ID:	MW1-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-1	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	6.3	0.77	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	13	1.6	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	13	0.42	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	6.3	3.1	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	6.3	0.31	ug/l	
132-64-9	Dibenzofuran	ND	6.3	0.39	ug/l	
84-74-2	Di-n-butyl phthalate	ND	6.3	0.42	ug/l	
117-84-0	Di-n-octyl phthalate	ND	6.3	0.42	ug/l	
84-66-2	Diethyl phthalate	ND	6.3	0.77	ug/l	
131-11-3	Dimethyl phthalate	ND	6.3	1.6	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.5	0.61	ug/l	
206-44-0	Fluoranthene	ND	6.3	0.27	ug/l	
86-73-7	Fluorene	ND	6.3	0.36	ug/l	
118-74-1	Hexachlorobenzene	ND	6.3	0.20	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	13	3.1	ug/l	
67-72-1	Hexachloroethane	ND	6.3	0.54	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	6.3	0.36	ug/l	
78-59-1	Isophorone	ND	6.3	0.59	ug/l	
91-57-6	2-Methylnaphthalene	ND	6.3	0.38	ug/l	
88-74-4	2-Nitroaniline	ND	13	0.42	ug/l	
99-09-2	3-Nitroaniline	ND	13	0.40	ug/l	
100-01-6	4-Nitroaniline	ND	13	0.42	ug/l	
91-20-3	Naphthalene	ND	6.3	0.41	ug/l	
98-95-3	Nitrobenzene	ND	6.3	0.38	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	6.3	0.51	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	6.3	0.77	ug/l	
85-01-8	Phenanthrene	ND	6.3	0.32	ug/l	
129-00-0	Pyrene	ND	6.3	0.31	ug/l	
110-86-1	Pyridine	ND	13	0.63	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		15-110%
4165-62-2	Phenol-d5	32%		15-110%
118-79-6	2,4,6-Tribromophenol	69%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	82%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW2-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-2	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51218.D	1	01/24/11	TD	n/a	n/a	MSE2163
Run #2	E51268.D	5	01/25/11	TD	n/a	n/a	MSE2165

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	294	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	7.8	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	4.7	5.0	0.37	ug/l	J
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	7.7	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	1.9	2.0	0.81	ug/l	J
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW2-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-2	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	740 <sup>a</sup>	5.0	3.1	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	61.7	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	3.2	5.0	0.45	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	65.2	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	737 <sup>a</sup>	5.0	3.7	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	279	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	74.4	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	892 <sup>a</sup>	5.0	3.1	ug/l	
95-47-6	o-Xylene	191	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	107%	105%	70-130%
2037-26-5	Toluene-D8	111%	112%	70-130%
460-00-4	4-Bromofluorobenzene	111%	109%	70-130%

(a) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3

<b>Client Sample ID:</b> MW2-ROX-011711	
<b>Lab Sample ID:</b> M97264-2	<b>Date Sampled:</b> 01/17/11
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/19/11
<b>Method:</b> SW846 8270C SW846 3510C	<b>Percent Solids:</b> n/a
<b>Project:</b> URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I70138.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
Run #2	I70189.D	5	02/01/11	PR	01/20/11	OP23913	MSI2471

Run #1	Initial Volume	Final Volume
Run #1	1050 ml	1.0 ml
Run #2	1050 ml	1.0 ml

**ABN PPL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	8.2	9.5	0.73	ug/l	J
95-57-8	2-Chlorophenol	ND	4.8	0.65	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.5	0.54	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.5	0.66	ug/l	
105-67-9	2,4-Dimethylphenol	2.2	9.5	2.0	ug/l	J
51-28-5	2,4-Dinitrophenol	ND	19	2.4	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.5	4.8	ug/l	
95-48-7	2-Methylphenol	2.8	9.5	0.46	ug/l	J
	3&4-Methylphenol	3.5	9.5	0.60	ug/l	J
88-75-5	2-Nitrophenol	ND	9.5	0.63	ug/l	
100-02-7	4-Nitrophenol	ND	19	4.8	ug/l	
87-86-5	Pentachlorophenol	ND	9.5	3.2	ug/l	
108-95-2	Phenol	ND	4.8	2.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	9.5	0.38	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.5	0.36	ug/l	
83-32-9	Acenaphthene	ND	4.8	0.32	ug/l	
208-96-8	Acenaphthylene	ND	4.8	1.2	ug/l	
62-53-3	Aniline	ND	9.5	0.43	ug/l	
120-12-7	Anthracene	ND	4.8	0.26	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.8	0.26	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.8	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.8	0.26	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.8	0.58	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.8	0.28	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	4.8	0.30	ug/l	
85-68-7	Butyl benzyl phthalate	ND	4.8	0.39	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.8	0.29	ug/l	
106-47-8	4-Chloroaniline	ND	9.5	0.55	ug/l	"US"
218-01-9	Chrysene	ND	4.8	0.21	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	4.8	0.33	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.8	0.22	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.8	0.20	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

*wg*  
*2/21/11*

## Report of Analysis

Client Sample ID:	MW2-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-2	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.8	0.58	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.5	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.5	0.32	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.8	2.4	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.8	0.24	ug/l	
132-64-9	Dibenzofuran	ND	4.8	0.30	ug/l	
84-74-2	Di-n-butyl phthalate	ND	4.8	0.32	ug/l	
117-84-0	Di-n-octyl phthalate	ND	4.8	0.32	ug/l	
84-66-2	Diethyl phthalate	ND	4.8	0.58	ug/l	
131-11-3	Dimethyl phthalate	ND	4.8	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	250 <sup>a</sup>	9.5	2.3	ug/l	
206-44-0	Fluoranthene	ND	4.8	0.21	ug/l	
86-73-7	Fluorene	ND	4.8	0.28	ug/l	
118-74-1	Hexachlorobenzene	ND	4.8	0.15	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.5	2.4	ug/l	
67-72-1	Hexachloroethane	ND	4.8	0.41	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.8	0.27	ug/l	
78-59-1	Isophorone	ND	4.8	0.45	ug/l	
91-57-6	2-Methylnaphthalene	6.5	4.8	0.29	ug/l	
88-74-4	2-Nitroaniline	ND	9.5	0.32	ug/l	
99-09-2	3-Nitroaniline	ND	9.5	0.31	ug/l	
100-01-6	4-Nitroaniline	ND	9.5	0.32	ug/l	
91-20-3	Naphthalene	31.2	4.8	0.31	ug/l	
98-95-3	Nitrobenzene	ND	4.8	0.29	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	4.8	0.39	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.8	0.58	ug/l	
85-01-8	Phenanthrene	ND	4.8	0.24	ug/l	
129-00-0	Pyrene	ND	4.8	0.24	ug/l	
110-86-1	Pyridine	ND	9.5	0.48	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	33%	33%	15-110%
4165-62-2	Phenol-d5	20%	23%	15-110%
118-79-6	2,4,6-Tribromophenol	59%	72%	15-110%
4165-60-0	Nitrobenzene-d5	58%	67%	30-130%
321-60-8	2-Fluorobiphenyl	60%	68%	30-130%
1718-51-0	Terphenyl-d14	60%	70%	30-130%

(a) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW3-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-3	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51219.D	1	01/24/11	TD	n/a	n/a	MSE2163
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	0.56	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	0.77	2.0	0.76	ug/l	J
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	0.82	2.0	0.81	ug/l	J
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW3-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-3	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	0.82	1.0	0.61	ug/l	J
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.1	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	0.85	5.0	0.62	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	1.2	1.0	0.62	ug/l	
95-47-6	o-Xylene	1.4	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-130%
2037-26-5	Toluene-D8	111%		70-130%
460-00-4	4-Bromofluorobenzene	112%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.3  
3

Client Sample ID:	MW3-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-3	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I70139.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

Run #1	Initial Volume	Final Volume
Run #2	940 ml	1.0 ml

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.82	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.73	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.74	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.51	ug/l	
	3&4-Methylphenol	ND	11	0.67	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.70	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	ND	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.43	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.65	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

*Wes*  
2/2/11

## Report of Analysis



Client Sample ID:	MW3-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-3	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.65	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.36	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.7	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.34	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	ND	5.3	0.65	ug/l	
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.62	2.1	0.52	ug/l	J
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.46	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.31	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.3	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.36	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.36	ug/l	
91-20-3	Naphthalene	ND	5.3	0.35	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.65	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	42%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	62%		15-110%
4165-60-0	Nitrobenzene-d5	67%		30-130%
321-60-8	2-Fluorobiphenyl	67%		30-130%
1718-51-0	Terphenyl-d14	76%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW4-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-4	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	E51220.D	1	01/24/11	TD	n/a	n/a	MSE2163

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	56.7	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	0.60	5.0	0.49	ug/l	J
135-98-8	sec-Butylbenzene	0.63	5.0	0.37	ug/l	J
98-06-6	tert-Butylbenzene	0.69	5.0	0.53	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	0.96	2.0	0.76	ug/l	J
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW4-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-4	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	2.0	5.0	0.51	ug/l	J
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	7.0	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	2.2	5.0	0.43	ug/l	J
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	7.1	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	6.2	1.0	0.62	ug/l	
95-47-6	o-Xylene	2.1	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	108%		70-130%
2037-26-5	Toluene-D8	111%		70-130%
460-00-4	4-Bromofluorobenzene	115%		70-130%

ND = Not detected      MDL - Method Detection Limit  
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J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3

<b>Client Sample ID:</b> MW4-ROX-011811 <b>Lab Sample ID:</b> M97264-4 <b>Matrix:</b> AQ - Ground Water <b>Method:</b> SW846 8270C SW846 3510C <b>Project:</b> URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	<b>Date Sampled:</b> 01/18/11 <b>Date Received:</b> 01/19/11 <b>Percent Solids:</b> n/a
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Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I70140.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

**ABN PPL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.79	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.59	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.49	ug/l	
	3&4-Methylphenol	ND	10	0.65	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.68	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.2	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.39	ug/l	
83-32-9	Acenaphthene	ND	5.2	0.35	ug/l	
208-96-8	Acenaphthylene	ND	5.2	1.3	ug/l	
62-53-3	Aniline	ND	10	0.47	ug/l	
120-12-7	Anthracene	ND	5.2	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.2	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.2	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.2	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.2	0.63	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.2	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	WJ
218-01-9	Chrysene	ND	5.2	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

WJ  
2/12/11



## Report of Analysis

Client Sample ID:	MW4-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-4	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.63	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.2	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.2	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.35	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	0.35	ug/l	
84-66-2	Diethyl phthalate	ND	5.2	0.63	ug/l	
131-11-3	Dimethyl phthalate	ND	5.2	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.50	ug/l	
206-44-0	Fluoranthene	ND	5.2	0.22	ug/l	
86-73-7	Fluorene	ND	5.2	0.30	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.2	0.44	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.2	0.30	ug/l	
78-59-1	Isophorone	ND	5.2	0.49	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.2	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.2	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.42	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.63	ug/l	
85-01-8	Phenanthrene	ND	5.2	0.26	ug/l	
129-00-0	Pyrene	ND	5.2	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	46%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	73%		15-110%
4165-60-0	Nitrobenzene-d5	74%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	88%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.5  
3

Client Sample ID:	MW5-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-5	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51221.D	1	01/24/11	TD	n/a	n/a	MSE2163
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	<del>34.40</del> ND <sup>34.4</sup>	5.0	4.6	ug/l	"u"
71-43-2	Benzene	4.8	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	1.4	5.0	0.53	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.5  
3

Client Sample ID:	MW5-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-5	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	6.6	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	0.87	1.0	0.62	ug/l	J
95-47-6	o-Xylene	1.4	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		70-130%
2037-26-5	Toluene-D8	109%		70-130%
460-00-4	4-Bromofluorobenzene	111%		70-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.5  
3

Client Sample ID:	MW5-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-5	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I70141.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

Run #1	Initial Volume	Final Volume
Run #2	940 ml	1.0 ml

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.82	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.73	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.74	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.51	ug/l	
	3&4-Methylphenol	ND	11	0.67	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.70	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	ND	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.43	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.65	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	"NJ"
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

*WMS*  
 2/2/11

## Report of Analysis

Client Sample ID:	MW5-ROX-011811	Date Sampled:	01/18/11
Lab Sample ID:	M97264-5	Date Received:	01/19/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.65	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.36	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.7	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.34	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	0.90	5.3	0.65	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.52	ug/l	
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.46	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.31	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.3	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.36	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.36	ug/l	
91-20-3	Naphthalene	ND	5.3	0.35	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.65	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	47%		15-110%
4165-62-2	Phenol-d5	29%		15-110%
118-79-6	2,4,6-Tribromophenol	67%		15-110%
4165-60-0	Nitrobenzene-d5	74%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	76%		30-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



Report of Analysis

3.6  
3

Client Sample ID:	TB-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-6	Date Received:	01/19/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51216.D	1	01/24/11	TD	n/a	n/a	MSE2163
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB-ROX-011711	Date Sampled:	01/17/11
Lab Sample ID:	M97264-6	Date Received:	01/19/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	0.86	2.0	0.75	ug/l	J
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		70-130%
2037-26-5	Toluene-D8	115%		70-130%
460-00-4	4-Bromofluorobenzene	110%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Misc. Forms

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## Custody Documents and Other Forms

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Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

# Shell Oil Products Chain Of Custody Record

LAB (LOCATION)  
 MILKO  
 CALSERVICE  
 OTHER (Northborough, MA 01752 (508-481-6200))  
 SOI  
 Lab Vendor # \_\_\_\_\_

Please Check Appropriate Box:  
 CIV SERVICES     MOTIVA RETAIL     SHELL RETAIL  
 MOTIVA STATION     CONSULTANT     UJRES  
 SHELL PIPELINE     OTHER \_\_\_\_\_

Print Bill To Contact Name: WENWY PENNINGTON  
 INCIDENT # (ENV SERVICES) 07210440  
 DATE 1/13/11  
 PAGE 1 of 1

170 EAST RAND AVENUE - HARTFORD  
 N. SATAM / K. HURST  
 LAT USE ONLY M97264

URS CORPORATION  
 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST LOUIS, MO 63110

WENWY PENNINGTON  
 314-743-4100 or 311-452-8920 314-429-0467

THROUGHOUT TIME (CALENDAR DAYS)  
 STANDARD (14 DAY)     5 DAYS     3 DAYS     2 DAYS     24 HOURS     DETAILS NEEDED (ON WEEKEND)

DELIVERANCE:  LEVEL 1     LEVEL 2     LEVEL 3     LEVEL 4     OTHER (SPECIFY) EDO

SPECIAL INSTRUCTIONS OR NOTES:  
 SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 ISO NOT NEEDED  
 FLUCLITY VERIFICATION REQUESTED  
 FORTUNE LCHO DISK

LAB USE ONLY	Field Sample Identification	SAMPLING		ANALYSIS	PRESERVATION					RE. OF CONT.	VOC 8260B	SVOC 8270C	FIELD NOTES:
		DATE	TIME		REF.	SHED	10/24	UJRES	OTHER				
-1	MW1-ROX-011711 ✓	1/13/11	12:25	Water	3		2		5	✓	✓	Temperature in Receipt C  Container PID Readings or Laboratory Name	
-2	MW2-ROX-011711 ✓	1/13/11	15:55		3		2		5	✓	✓		
-3	MW3-ROX-011811 ✓	1/18/11	10:50		3		2		5	✓	✓		
-4	MW4-ROX-011811 ✓	1/18/11	13:30		3		2		5	✓	✓		
-5	MW5-ROX-011811 ✓	1/18/11	15:35		3		2		5	✓	✓		
-6	TB-ROX-011711 ✓	1/13/11			2				2	✓	✓		

QUOTE # PEK1201018-14

Requested by (Signature) *Satam*    Received by (Signature) *FedEx*    Date 01/13/11    Time 1730

Requested by (Signature) *FedEx*    Received by (Signature) *AmBany*    Date 1/19/11    Time 10:15

Requested by (Signature)    Received by (Signature)    Date    Time 1.4/1.80

4.1  
4

M97264: Chain of Custody  
Page 1 of 2



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: M97264 Client: URS Immediate Client Services Action Required: No  
 Date / Time Received: 1/19/2011 Delivery Method: \_\_\_\_\_ Client Service Action Required at Login: No  
 Project: 170 EAST RAND AVE HARTFORD No. Coolers: 1 Airbill #s: N/A

**Cooler Security**      Y or N      Y or N  
 1. Custody Seals Present:        3. COC Present:    
 2. Custody Seals Intact:        4. Smpl Dates/Time OK:

**Cooler Temperature**      Y or N  
 1. Temp criteria achieved:    
 2. Cooler temp verification: Infrared gun  
 3. Cooler media: Ice (bag)

**Quality Control Preservation**      Y or N      N/A  
 1. Trip Blank present / cooler:     
 2. Trip Blank listed on COC:     
 3. Samples preserved properly:    
 4. VOCs headspace free:

**Sample Integrity - Documentation**      Y or N  
 1. Sample labels present on bottles:    
 2. Container labeling complete:    
 3. Sample container label / COC agree:

**Sample Integrity - Condition**      Y or N  
 1. Sample recvd within HT:    
 2. All containers accounted for:    
 3. Condition of sample: Intact

**Sample Integrity - Instructions**      Y or N      N/A  
 1. Analysis requested is clear:    
 2. Bottles received for unspecified tests:    
 3. Sufficient volume recvd for analysis:    
 4. Compositing instructions clear:     
 5. Filtering instructions clear:

Comments

4.1  
4



### Internal Sample Tracking Chronicle

Shell Oil

Job No: M97264

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

4.2  
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M97264-1 Collected: 17-JAN-11 12:25 By: NSKH Received: 19-JAN-11 By: JB MW1-ROX-011711						
M97264-1	SW846 8260B	24-JAN-11 12:55	TD			V8260STD
M97264-1	SW846 8270C	29-JAN-11 15:58	PR	20-JAN-11	CA	AB8270PPL
M97264-2 Collected: 17-JAN-11 16:55 By: NSKH Received: 19-JAN-11 By: JB MW2-ROX-011711						
M97264-2	SW846 8260B	24-JAN-11 13:24	TD			V8260STD
M97264-2	SW846 8260B	25-JAN-11 14:14	TD			V8260STD
M97264-2	SW846 8270C	29-JAN-11 16:29	PR	20-JAN-11	CA	AB8270PPL
M97264-2	SW846 8270C	01-FEB-11 17:58	PR	20-JAN-11	CA	AB8270PPL
M97264-3 Collected: 18-JAN-11 10:50 By: NSKH Received: 19-JAN-11 By: JB MW3-ROX-011811						
M97264-3	SW846 8260B	24-JAN-11 13:53	TD			V8260STD
M97264-3	SW846 8270C	29-JAN-11 17:01	PR	20-JAN-11	CA	AB8270PPL
M97264-4 Collected: 18-JAN-11 13:35 By: NSKH Received: 19-JAN-11 By: JB MW4-ROX-011811						
M97264-4	SW846 8260B	24-JAN-11 14:22	TD			V8260STD
M97264-4	SW846 8270C	29-JAN-11 17:32	PR	20-JAN-11	CA	AB8270PPL
M97264-5 Collected: 18-JAN-11 15:55 By: NSKH Received: 19-JAN-11 By: JB MW5-ROX-011811						
M97264-5	SW846 8260B	24-JAN-11 14:44	TD			V8260STD
M97264-5	SW846 8270C	29-JAN-11 18:03	PR	20-JAN-11	CA	AB8270PPL
M97264-6 Collected: 17-JAN-11 00:00 By: NSKH Received: 19-JAN-11 By: JB TB-ROX-011711						
M97264-6	SW846 8260B	24-JAN-11 12:27	TD			V8260STD

# Accutest Internal Chain of Custody

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/19/11

4.3  
**4**

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97264-1.1	Walk In Ref #22	Bijan Jafari	01/20/11 10:02	Retrieve from Storage
M97264-1.1	Bijan Jafari		01/22/11 05:56	Depleted
M97264-1.4	VOC Ref #5	Tamis Dudo	01/24/11 11:38	Retrieve from Storage
M97264-1.4	Tamis Dudo	GCMSE	01/24/11 11:39	Load on Instrument
M97264-1.4	GCMSE	Tamis Dudo	01/25/11 09:42	Unload from Instrument
M97264-1.4	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage
M97264-2.2	Walk In Ref #22	Bijan Jafari	01/20/11 10:02	Retrieve from Storage
M97264-2.2	Bijan Jafari		01/22/11 05:56	Depleted
M97264-2.3	VOC Ref #5	Tamis Dudo	01/24/11 11:38	Retrieve from Storage
M97264-2.3	Tamis Dudo	GCMSE	01/24/11 11:39	Load on Instrument
M97264-2.3	GCMSE	Tamis Dudo	01/25/11 09:42	Unload from Instrument
M97264-2.3	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage
M97264-2.4	VOC Ref #5	Tamis Dudo	01/25/11 12:31	Retrieve from Storage
M97264-2.4	Tamis Dudo	GCMSE	01/25/11 12:32	Load on Instrument
M97264-2.4	GCMSE	Tamis Dudo	01/26/11 08:53	Unload from Instrument
M97264-2.4	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage
M97264-3.2	Walk In Ref #22	Bijan Jafari	01/20/11 10:02	Retrieve from Storage
M97264-3.2	Bijan Jafari		01/22/11 05:56	Depleted
M97264-3.5	VOC Ref #5	Tamis Dudo	01/24/11 11:38	Retrieve from Storage
M97264-3.5	Tamis Dudo	GCMSE	01/24/11 11:39	Load on Instrument
M97264-3.5	GCMSE	Tamis Dudo	01/25/11 09:42	Unload from Instrument
M97264-3.5	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage
M97264-4.2	Walk In Ref #22	Bijan Jafari	01/20/11 10:02	Retrieve from Storage
M97264-4.2	Bijan Jafari		01/22/11 05:56	Depleted
M97264-4.5	VOC Ref #5	Tamis Dudo	01/24/11 11:38	Retrieve from Storage
M97264-4.5	Tamis Dudo	GCMSE	01/24/11 11:39	Load on Instrument
M97264-4.5	GCMSE	Tamis Dudo	01/25/11 09:42	Unload from Instrument
M97264-4.5	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage
M97264-5.2	Walk In Ref #22	Bijan Jafari	01/20/11 10:02	Retrieve from Storage
M97264-5.2	Bijan Jafari		01/22/11 05:56	Depleted
M97264-5.3	VOC Ref #5	Tamis Dudo	01/24/11 11:38	Retrieve from Storage
M97264-5.3	Tamis Dudo	GCMSE	01/24/11 11:39	Load on Instrument
M97264-5.3	GCMSE	Tamis Dudo	01/25/11 09:42	Unload from Instrument
M97264-5.3	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage

# Accutest Internal Chain of Custody

Job Number: M97264  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
Received: 01/19/11

4.3

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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97264-6.2	VOC Ref #5	Tamis Dudo	01/24/11 11:38	Retrieve from Storage
M97264-6.2	Tamis Dudo	GCMSE	01/24/11 11:39	Load on Instrument
M97264-6.2	GCMSE	Tamis Dudo	01/25/11 09:42	Unload from Instrument
M97264-6.2	Tamis Dudo	VOC Ref #5	01/27/11 15:18	Return to Storage

## GC/MS Volatiles

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**5**

## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2163-MB	E51215.D	1	01/24/11	TD	n/a	n/a	MSE2163

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5, M97264-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.1  
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# Method Blank Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2163-MB	E51215.D	1	01/24/11	TD	n/a	n/a	MSE2163

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5, M97264-6

CAS No.	Compound	Result	RL	MDL	Units	Q
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	117%	70-130%
2037-26-5	Toluene-D8	113%	70-130%
460-00-4	4-Bromofluorobenzene	106%	70-130%

5.1.1  
5

# Method Blank Summary

Job Number: M97264  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2165-MB	E51265.D	1	01/25/11	TD	n/a	n/a	MSE2165

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-2

CAS No.	Compound	Result	RL	MDL	Units	Q
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	105% 70-130%
2037-26-5	Toluene-D8	119% 70-130%
460-00-4	4-Bromofluorobenzene	110% 70-130%

5.1.2  
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# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2163-BS	E51212.D	1	01/24/11	TD	n/a	n/a	MSE2163
MSE2163-BSD	E51213.D	1	01/24/11	TD	n/a	n/a	MSE2163

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5, M97264-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	49.0	98	45.9	92	7	70-130/25
71-43-2	Benzene	50	56.3	113	55.3	111	2	70-130/25
108-86-1	Bromobenzene	50	51.8	104	50.4	101	3	70-130/25
74-97-5	Bromochloromethane	50	52.6	105	51.7	103	2	70-130/25
75-27-4	Bromodichloromethane	50	53.1	106	51.9	104	2	70-130/25
75-25-2	Bromoform	50	45.7	91	43.7	87	4	70-130/25
74-83-9	Bromomethane	50	54.5	109	52.6	105	4	70-130/25
78-93-3	2-Butanone (MEK)	50	47.8	96	41.3	83	15	70-130/25
104-51-8	n-Butylbenzene	50	57.8	116	55.7	111	4	70-130/25
135-98-8	sec-Butylbenzene	50	55.6	111	53.9	108	3	70-130/25
98-06-6	tert-Butylbenzene	50	56.5	113	55.5	111	2	70-130/25
75-15-0	Carbon disulfide	50	53.6	107	47.3	95	12	70-130/25
56-23-5	Carbon tetrachloride	50	55.0	110	54.1	108	2	70-130/25
108-90-7	Chlorobenzene	50	53.5	107	52.3	105	2	70-130/25
75-00-3	Chloroethane	50	55.1	110	54.8	110	1	70-130/25
67-66-3	Chloroform	50	55.2	110	53.3	107	4	70-130/25
74-87-3	Chloromethane	50	60.5	121	61.0	122	1	70-130/25
95-49-8	o-Chlorotoluene	50	55.2	110	52.6	105	5	70-130/25
106-43-4	p-Chlorotoluene	50	55.8	112	53.4	107	4	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	46.3	93	43.1	86	7	70-130/25
124-48-1	Dibromochloromethane	50	49.4	99	47.0	94	5	70-130/25
95-50-1	1,2-Dichlorobenzene	50	53.0	106	51.0	102	4	70-130/25
541-73-1	1,3-Dichlorobenzene	50	54.7	109	52.8	106	4	70-130/25
106-46-7	1,4-Dichlorobenzene	50	54.7	109	52.7	105	4	70-130/25
75-71-8	Dichlorodifluoromethane	50	62.7	125	61.9	124	1	70-130/25
75-34-3	1,1-Dichloroethane	50	56.0	112	54.5	109	3	70-130/25
107-06-2	1,2-Dichloroethane	50	50.1	100	49.6	99	1	70-130/25
75-35-4	1,1-Dichloroethene	50	55.1	110	55.0	110	0	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	50.3	101	48.5	97	4	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	54.3	109	53.1	106	2	70-130/25
78-87-5	1,2-Dichloropropane	50	52.6	105	52.5	105	0	70-130/25
142-28-9	1,3-Dichloropropane	50	49.1	98	48.1	96	2	70-130/25
594-20-7	2,2-Dichloropropane	50	62.3	125	59.6	119	4	70-130/25
563-58-6	1,1-Dichloropropene	50	55.2	110	55.1	110	0	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	54.8	110	52.7	105	4	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	57.1	114	55.0	110	4	70-130/25

5.2.1  
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# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2163-BS	E51212.D	1	01/24/11	TD	n/a	n/a	MSE2163
MSE2163-BSD	E51213.D	1	01/24/11	TD	n/a	n/a	MSE2163

5.2.1  
5

The QC reported here applies to the following samples: Method: SW846 8260B

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5, M97264-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	50	55.0	110	53.9	108	2	70-130/25
87-68-3	Hexachlorobutadiene	50	59.5	119	59.6	119	0	70-130/25
98-82-8	Isopropylbenzene	50	62.3	125	60.8	122	2	70-130/25
99-87-6	p-Isopropyltoluene	50	57.9	116	56.0	112	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	45.5	91	44.0	88	3	70-130/25
74-95-3	Methylene bromide	50	52.5	105	51.3	103	2	70-130/25
75-09-2	Methylene chloride	50	53.7	107	51.9	104	3	70-130/25
103-65-1	n-Propylbenzene	50	54.0	108	52.9	106	2	70-130/25
100-42-5	Styrene	50	50.3	101	49.7	99	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	53.6	107	51.9	104	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	48.6	97	47.1	94	3	70-130/25
127-18-4	Tetrachloroethene	50	49.4	99	49.2	98	0	70-130/25
108-88-3	Toluene	50	52.0	104	51.6	103	1	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	48.3	97	48.2	96	0	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	51.9	104	50.1	100	4	70-130/25
71-55-6	1,1,1-Trichloroethane	50	55.8	112	54.1	108	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	53.0	106	52.0	104	2	70-130/25
79-01-6	Trichloroethene	50	53.0	106	56.5	113	6	70-130/25
75-69-4	Trichlorofluoromethane	50	57.0	114	55.3	111	3	70-130/25
96-18-4	1,2,3-Trichloropropane	50	46.4	93	43.4	87	7	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	54.2	108	52.1	104	4	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	54.2	108	52.4	105	3	70-130/25
108-05-4	Vinyl Acetate	50	36.8	74	35.9	72	2	70-130/25
75-01-4	Vinyl chloride	50	59.8	120	60.4	121	1	70-130/25
	m,p-Xylene	100	109	109	107	107	2	70-130/25
95-47-6	o-Xylene	50	50.8	102	49.3	99	3	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	110%	107%	70-130%
2037-26-5	Toluene-D8	113%	112%	70-130%
460-00-4	4-Bromofluorobenzene	109%	106%	70-130%

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97264

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2165-BS	E51262.D	1	01/25/11	TD	n/a	n/a	MSE2165
MSE2165-BSD	E51263.D	1	01/25/11	TD	n/a	n/a	MSE2165

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	50	56.5	113	55.9	112	1	70-130/25
108-88-3	Toluene	50	51.3	103	53.0	106	3	70-130/25
	m,p-Xylene	100	112	112	110	110	2	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	105%	101%	70-130%
2037-26-5	Toluene-D8	114%	115%	70-130%
460-00-4	4-Bromofluorobenzene	113%	113%	70-130%

5.2.2  
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# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97291-1MS	E51223.D	5	01/24/11	TD	n/a	n/a	MSE2163
M97291-1MSD	E51224.D	5	01/24/11	TD	n/a	n/a	MSE2163
M97291-1	E51222.D	1	01/24/11	TD	n/a	n/a	MSE2163

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5, M97264-6

CAS No.	Compound	M97291-1 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	14.6	250	294	112	281	107	5	70-130/30
71-43-2	Benzene	1.5	250	291	116	290	115	0	70-130/30
108-86-1	Bromobenzene	ND	250	268	107	274	110	2	70-130/30
74-97-5	Bromochloromethane	ND	250	274	110	275	110	0	70-130/30
75-27-4	Bromodichloromethane	ND	250	253	101	249	100	2	70-130/30
75-25-2	Bromoform	ND	250	183	73	176	70	4	70-130/30
74-83-9	Bromomethane	ND	250	280	112	262	105	7	70-130/30
78-93-3	2-Butanone (MEK)	ND	250	253	101	305	122	19	70-130/30
104-51-8	n-Butylbenzene	0.67	250	295	118	296	118	0	70-130/30
135-98-8	sec-Butylbenzene	0.99	250	288	115	292	116	1	70-130/30
98-06-6	tert-Butylbenzene	ND	250	291	116	293	117	1	70-130/30
75-15-0	Carbon disulfide	ND	250	254	102	263	105	3	70-130/30
56-23-5	Carbon tetrachloride	ND	250	281	112	279	112	1	70-130/30
108-90-7	Chlorobenzene	ND	250	282	113	272	109	4	70-130/30
75-00-3	Chloroethane	0.88	250	292	116	282	112	3	70-130/30
67-66-3	Chloroform	ND	250	290	116	287	115	1	70-130/30
74-87-3	Chloromethane	ND	250	294	118	291	116	1	70-130/30
95-49-8	o-Chlorotoluene	ND	250	282	113	284	114	1	70-130/30
106-43-4	p-Chlorotoluene	ND	250	283	113	288	115	2	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	213	85	222	89	4	70-130/30
124-48-1	Dibromochloromethane	ND	250	217	87	207	83	5	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	250	265	106	265	106	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	250	276	110	275	110	0	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	250	276	110	275	110	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND	250	327	131* a	315	126	4	70-130/30
75-34-3	1,1-Dichloroethane	1.2	250	298	119	297	118	0	70-130/30
107-06-2	1,2-Dichloroethane	ND	250	255	102	255	102	0	70-130/30
75-35-4	1,1-Dichloroethene	ND	250	290	116	293	117	1	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	250	257	103	258	103	0	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	250	279	112	280	112	0	70-130/30
78-87-5	1,2-Dichloropropane	ND	250	270	108	271	108	0	70-130/30
142-28-9	1,3-Dichloropropane	ND	250	254	102	248	99	2	70-130/30
594-20-7	2,2-Dichloropropane	ND	250	322	129	299	120	7	70-130/30
563-58-6	1,1-Dichloropropene	ND	250	289	116	290	116	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	250	267	107	266	106	0	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	250	273	109	277	111	1	70-130/30

5.3.1  
5



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97291-1MS	E51223.D	5	01/24/11	TD	n/a	n/a	MSE2163
M97291-1MSD	E51224.D	5	01/24/11	TD	n/a	n/a	MSE2163
M97291-1	E51222.D	1	01/24/11	TD	n/a	n/a	MSE2163

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5, M97264-6

CAS No.	Compound	M97291-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
100-41-4	Ethylbenzene	0.76		250	284	113	281	112	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		250	306	122	313	125	2	70-130/30
98-82-8	Isopropylbenzene	0.86		250	326	130	335	134* a	3	70-130/30
99-87-6	p-Isopropyltoluene	ND		250	296	118	298	119	1	70-130/30
1634-04-4	Methyl Tert Butyl Ether	738	E	250	893	62* b	868	52* b	3	70-130/30
74-95-3	Methylene bromide	ND		250	271	108	265	106	2	70-130/30
75-09-2	Methylene chloride	ND		250	273	109	272	109	0	70-130/30
103-65-1	n-Propylbenzene	1.4		250	282	112	286	114	1	70-130/30
100-42-5	Styrene	ND		250	247	99	241	96	2	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		250	276	110	269	108	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		250	249	100	248	99	0	70-130/30
127-18-4	Tetrachloroethene	ND		250	266	106	262	105	2	70-130/30
108-88-3	Toluene	ND		250	271	108	266	106	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		250	241	96	246	98	2	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		250	260	104	263	105	1	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		250	296	118	284	114	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		250	267	107	257	103	4	70-130/30
79-01-6	Trichloroethene	ND		250	290	116	284	114	2	70-130/30
75-69-4	Trichlorofluoromethane	ND		250	302	121	288	115	5	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		250	220	88	229	92	4	70-130/30
95-63-6	1,2,4-Trimethylbenzene	1.2		250	275	110	275	110	0	70-130/30
108-67-8	1,3,5-Trimethylbenzene	0.56		250	276	110	280	112	1	70-130/30
108-05-4	Vinyl Acetate	ND		250	183	73	186	74	2	70-130/30
75-01-4	Vinyl chloride	ND		250	307	123	302	121	2	70-130/30
	m,p-Xylene	0.74		500	570	114	566	113	1	70-130/30
95-47-6	o-Xylene	1.5		250	259	103	254	101	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97291-1	Limits
1868-53-7	Dibromofluoromethane	111%	109%	112%	70-130%
2037-26-5	Toluene-D8	114%	112%	112%	70-130%
460-00-4	4-Bromofluorobenzene	110%	113%	110%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

(b) Outside control limits due to high level in sample relative to spike amount.

5.3.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97309-5MS	E51274.D	5	01/25/11	TD	n/a	n/a	MSE2165
M97309-5MSD	E51275.D	5	01/25/11	TD	n/a	n/a	MSE2165
M97309-5	E51273.D	5	01/25/11	TD	n/a	n/a	MSE2165

5.3.2  
5

The QC reported here applies to the following samples:

Method: SW846 8260B

M97264-2

CAS No.	Compound	M97309-5 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	1860		250	2060	80	2080	88	1	70-130/30
108-88-3	Toluene	8480	E	250	8450	-12* a	8610	52* a	2	70-130/30
	m,p-Xylene	6130	E	500	6380	50* a	6440	62* a	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97309-5	Limits
1868-53-7	Dibromofluoromethane	106%	107%	106%	70-130%
2037-26-5	Toluene-D8	109%	109%	110%	70-130%
460-00-4	4-Bromofluorobenzene	115%	116%	112%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

# Volatile Internal Standard Area Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSE2163-CC2152	Injection Date:	01/24/11
Lab File ID:	E51211.D	Injection Time:	10:12
Instrument ID:	GCMSE	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	225782	9.10	380437	9.98	168859	13.24	166904	15.81	43603	6.61
Upper Limit <sup>a</sup>	451564	9.60	760874	10.48	337718	13.74	333808	16.31	87206	7.11
Lower Limit <sup>b</sup>	112891	8.60	190219	9.48	84430	12.74	83452	15.31	21802	6.11

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSE2163-BS	220745	9.10	365537	9.97	165700	13.25	162322	15.80	42763	6.61
MSE2163-BSD	230955	9.10	379300	9.98	172677	13.24	171667	15.80	45148	6.61
MSE2163-MB	208341	9.10	350079	9.97	153284	13.25	154427	15.80	44331	6.61
M97264-6	213103	9.10	351279	9.98	153440	13.24	146871	15.81	36959	6.62
M97264-1	205624	9.10	340794	9.98	146921	13.24	146367	15.81	38668	6.62
M97264-2	221921	9.10	370241	9.98	160212	13.25	159509	15.80	50542	6.61
M97264-3	225074	9.10	375243	9.98	161949	13.24	156719	15.81	51394	6.61
M97264-4	224320	9.11	370899	9.98	163914	13.25	151259	15.81	46508	6.62
M97264-5	217359	9.10	362141	9.98	159015	13.24	154049	15.81	48724	6.62
M97291-1	216404	9.11	363777	9.98	157149	13.25	155640	15.81	55077	6.62
M97291-1MS	219464	9.10	366052	9.98	162832	13.24	160777	15.81	41480	6.61
M97291-1MSD	227995	9.10	382522	9.98	171731	13.25	162189	15.80	43262	6.61
ZZZZZZ	220955	9.10	374065	9.98	159995	13.25	158899	15.80	41567	6.61
ZZZZZZ	222262	9.10	365586	9.98	160923	13.25	159593	15.80	41546	6.61
ZZZZZZ	215057	9.10	356935	9.98	153645	13.25	151425	15.80	44569	6.62
ZZZZZZ	223619	9.10	369372	9.98	160757	13.25	162484	15.80	40994	6.61
ZZZZZZ	215511	9.10	352998	9.98	154265	13.25	148078	15.81	45201	6.61
ZZZZZZ	209042	9.10	346056	9.98	151586	13.25	148535	15.80	44153	6.61
ZZZZZZ	212116	9.10	347590	9.98	149582	13.25	149413	15.81	41412	6.61
ZZZZZZ	226597	9.10	376724	9.98	162520	13.24	156555	15.81	41308	6.61
ZZZZZZ	233463	9.10	376347	9.98	167957	13.25	159866	15.80	38629	6.61

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.4.1  
5

# Volatile Internal Standard Area Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSE2165-CC2152	Injection Date:	01/25/11
Lab File ID:	E51261.D	Injection Time:	11:02
Instrument ID:	GCMSE	Method:	SW846 8260B

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	226638	9.12	351039	10.00	163350	13.27	155593	15.82	39445	6.63
Upper Limit <sup>a</sup>	453276	9.62	702078	10.50	326700	13.77	311186	16.32	78890	7.13
Lower Limit <sup>b</sup>	113319	8.62	175520	9.50	81675	12.77	77797	15.32	19723	6.13

Lab	IS 1		IS 2		IS 3		IS 4		IS 5	
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MSE2165-BS	215421	9.12	350600	9.99	157418	13.27	151935	15.82	41770	6.63
MSE2165-BSD	220082	9.12	347893	9.99	159743	13.27	152158	15.82	43802	6.63
MSE2165-MB	219621	9.12	340955	10.00	155797	13.26	154593	15.82	42539	6.63
ZZZZZZ	223551	9.12	355793	10.00	155591	13.26	155282	15.82	36505	6.64
ZZZZZZ	218082	9.12	358708	9.99	157610	13.27	154013	15.82	41208	6.63
M97264-2	223042	9.13	357437	10.00	157087	13.27	155885	15.82	40840	6.63
ZZZZZZ	227340	9.12	366904	10.00	160660	13.26	159673	15.82	39209	6.64
ZZZZZZ	219586	9.12	358220	10.00	159977	13.27	160585	15.82	40530	6.64
ZZZZZZ	219445	9.12	359447	9.99	167776	13.27	160474	15.82	42427	6.64
M97309-5	231489	9.12	378732	10.00	159330	13.26	158031	15.82	49567	6.63
M97309-5MS	231560	9.12	392127	10.00	169224	13.26	160322	15.82	50477	6.63
M97309-5MSD	223154	9.12	381521	9.99	166566	13.27	152853	15.82	49793	6.63
ZZZZZZ	208343	9.12	340841	10.00	154110	13.26	152398	15.82	43045	6.63
ZZZZZZ	212646	9.12	352026	9.99	157476	13.26	155981	15.82	44106	6.64
ZZZZZZ	219069	9.12	359650	10.00	158106	13.26	157193	15.82	42622	6.63
ZZZZZZ	219499	9.12	368964	10.00	162923	13.26	164816	15.82	46493	6.63
ZZZZZZ	210187	9.12	345804	9.99	158106	13.27	155517	15.82	39050	6.63
ZZZZZZ	212774	9.12	352461	9.99	158988	13.26	157515	15.82	38790	6.63
ZZZZZZ	216262	9.12	357350	10.00	158806	13.26	157170	15.82	42176	6.63
ZZZZZZ	220194	9.12	361227	9.99	157742	13.26	161248	15.82	43994	6.63

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.4.2  
5

# Volatile Surrogate Recovery Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8260B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M97264-1	E51217.D	112.0	114.0	109.0
M97264-2	E51268.D	105.0	112.0	109.0
M97264-2	E51218.D	107.0	111.0	111.0
M97264-3	E51219.D	110.0	111.0	112.0
M97264-4	E51220.D	108.0	111.0	115.0
M97264-5	E51221.D	114.0	109.0	111.0
M97264-6	E51216.D	112.0	115.0	110.0
M97291-1MS	E51223.D	111.0	114.0	110.0
M97291-1MSD	E51224.D	109.0	112.0	113.0
M97309-5MS	E51274.D	106.0	109.0	115.0
M97309-5MSD	E51275.D	107.0	109.0	116.0
MSE2163-BS	E51212.D	110.0	113.0	109.0
MSE2163-BSD	E51213.D	107.0	112.0	106.0
MSE2163-MB	E51215.D	117.0	113.0	106.0
MSE2165-BS	E51262.D	105.0	114.0	113.0
MSE2165-BSD	E51263.D	101.0	115.0	113.0
MSE2165-MB	E51265.D	105.0	119.0	110.0

Surrogate Compounds	Recovery Limits
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S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

5.5.1  
**5**



GC/MS Semi-volatiles

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9

QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

## Method Blank Summary

Page 1 of 2

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-MB	I70132.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	

6.1.1

6



## Method Blank Summary

Page 2 of 2

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-MB	I70132.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

6.1.1

6

CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	ND	5.0	0.61	ug/l	
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	44%	15-110%
4165-62-2	Phenol-d5	28%	15-110%
118-79-6	2,4,6-Tribromophenol	60%	15-110%
4165-60-0	Nitrobenzene-d5	69%	30-130%
321-60-8	2-Fluorobiphenyl	68%	30-130%
1718-51-0	Terphenyl-d14	84%	30-130%

# Blank Spike Summary

Job Number: M97264

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-BS	I70133.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	39.1	39	30-130
95-57-8	2-Chlorophenol	100	78.4	78	30-130
59-50-7	4-Chloro-3-methyl phenol	100	84.2	84	30-130
120-83-2	2,4-Dichlorophenol	100	84.1	84	30-130
105-67-9	2,4-Dimethylphenol	100	69.3	69	30-130
51-28-5	2,4-Dinitrophenol	100	80.1	80	30-130
534-52-1	4,6-Dinitro-o-cresol	100	82.6	83	30-130
95-48-7	2-Methylphenol	100	74.0	74	30-130
	3&4-Methylphenol	200	139	70	30-130
88-75-5	2-Nitrophenol	100	84.6	85	30-130
100-02-7	4-Nitrophenol	100	47.9	48	30-130
87-86-5	Pentachlorophenol	100	86.7	87	30-130
108-95-2	Phenol	100	38.5	39	30-130
95-95-4	2,4,5-Trichlorophenol	100	82.9	83	30-130
88-06-2	2,4,6-Trichlorophenol	100	84.9	85	30-130
83-32-9	Acenaphthene	50	42.0	84	40-140
208-96-8	Acenaphthylene	50	34.7	69	40-140
62-53-3	Aniline	50	22.6	45	40-140
120-12-7	Anthracene	50	39.7	79	40-140
56-55-3	Benzo(a)anthracene	50	46.2	92	40-140
50-32-8	Benzo(a)pyrene	50	38.4	77	40-140
205-99-2	Benzo(b)fluoranthene	50	43.2	86	40-140
191-24-2	Benzo(g,h,i)perylene	50	40.7	81	40-140
207-08-9	Benzo(k)fluoranthene	50	48.2	96	40-140
101-55-3	4-Bromophenyl phenyl ether	50	41.7	83	40-140
85-68-7	Butyl benzyl phthalate	50	46.9	94	40-140
91-58-7	2-Chloronaphthalene	50	41.5	83	40-140
106-47-8	4-Chloroaniline	50	14.3	29* a	40-140
218-01-9	Chrysene	50	49.4	99	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	41.6	83	40-140
111-44-4	bis(2-Chloroethyl)ether	50	43.3	87	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	45.7	91	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	42.0	84	40-140
121-14-2	2,4-Dinitrotoluene	50	41.9	84	40-140
606-20-2	2,6-Dinitrotoluene	50	41.5	83	40-140
91-94-1	3,3'-Dichlorobenzidine	50	20.9	42	40-140

6.2.1

6

# Blank Spike Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-BS	I70133.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

6.2.1  
6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
53-70-3	Dibenzo(a,h)anthracene	50	40.3	81	40-140
132-64-9	Dibenzofuran	50	40.9	82	40-140
84-74-2	Di-n-butyl phthalate	50	44.7	89	40-140
117-84-0	Di-n-octyl phthalate	50	51.1	102	40-140
84-66-2	Diethyl phthalate	50	43.8	88	40-140
131-11-3	Dimethyl phthalate	50	43.1	86	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	45.6	91	40-140
206-44-0	Fluoranthene	50	43.1	86	40-140
86-73-7	Fluorene	50	42.4	85	40-140
118-74-1	Hexachlorobenzene	50	43.3	87	40-140
77-47-4	Hexachlorocyclopentadiene	50	24.1	48	40-140
67-72-1	Hexachloroethane	50	38.0	76	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	41.2	82	40-140
78-59-1	Isophorone	50	41.1	82	40-140
91-57-6	2-Methylnaphthalene	50	38.2	76	40-140
88-74-4	2-Nitroaniline	50	42.8	86	40-140
99-09-2	3-Nitroaniline	50	22.3	45	40-140
100-01-6	4-Nitroaniline	50	37.3	75	40-140
91-20-3	Naphthalene	50	41.6	83	40-140
98-95-3	Nitrobenzene	50	41.1	82	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	45.6	91	40-140
86-30-6	N-Nitrosodiphenylamine	50	42.2	84	40-140
85-01-8	Phenanthrene	50	41.2	82	40-140
129-00-0	Pyrene	50	46.0	92	40-140
110-86-1	Pyridine	50	26.7	53	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	54%	15-110%
4165-62-2	Phenol-d5	36%	15-110%
118-79-6	2,4,6-Tribromophenol	76%	15-110%
4165-60-0	Nitrobenzene-d5	82%	30-130%
321-60-8	2-Fluorobiphenyl	82%	30-130%
1718-51-0	Terphenyl-d14	91%	30-130%

## Blank Spike Summary

Page 3 of 3

Job Number: M97264

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-BS	I70133.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

6.2.1

6

(a) Outside control limits. Blank Spike meets program technical requirements.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-MS	I70134.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
OP23913-MSD	I70135.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
M97236-1	I70136.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

CAS No.	Compound	M97236-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	100	42.0	42	39.0	39	7	30-130/20
95-57-8	2-Chlorophenol	ND	100	81.0	81	77.1	77	5	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	100	86.4	86	80.9	81	7	30-130/20
120-83-2	2,4-Dichlorophenol	ND	100	86.2	86	82.7	83	4	30-130/20
105-67-9	2,4-Dimethylphenol	ND	100	67.4	67	60.3	60	11	30-130/20
51-28-5	2,4-Dinitrophenol	ND	100	83.3	83	83.1	83	0	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND	100	86.3	86	84.5	85	2	30-130/20
95-48-7	2-Methylphenol	ND	100	76.4	76	70.7	71	8	30-130/20
	3&4-Methylphenol	ND	200	144	72	131	66	9	30-130/20
88-75-5	2-Nitrophenol	ND	100	86.5	87	84.2	84	3	30-130/20
100-02-7	4-Nitrophenol	ND	100	48.9	49	48.7	49	0	30-130/20
87-86-5	Pentachlorophenol	ND	100	90.3	90	88.2	88	2	30-130/20
108-95-2	Phenol	ND	100	39.7	40	36.7	37	8	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	100	83.7	84	84.3	84	1	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	100	84.9	85	84.9	85	0	30-130/20
83-32-9	Acenaphthene	ND	50	43.0	86	42.4	85	1	40-140/20
208-96-8	Acenaphthylene	ND	50	35.2	70	34.8	70	1	40-140/20
62-53-3	Aniline	ND	50	24.3	49	23.9	48	2	40-140/20
120-12-7	Anthracene	ND	50	41.1	82	40.7	81	1	40-140/20
56-55-3	Benzo(a)anthracene	ND	50	48.3	97	46.8	94	3	40-140/20
50-32-8	Benzo(a)pyrene	ND	50	39.8	80	38.8	78	3	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	50	44.7	89	43.4	87	3	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	50	43.1	86	44.8	90	4	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	50	50.0	100	48.0	96	4	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	50	43.2	86	42.2	84	2	40-140/20
85-68-7	Butyl benzyl phthalate	ND	50	49.6	99	45.5	91	9	40-140/20
91-58-7	2-Chloronaphthalene	ND	50	42.4	85	42.8	86	1	40-140/20
106-47-8	4-Chloroaniline	ND	50	15.9	32* a	14.9	30* a	6	40-140/20
218-01-9	Chrysene	ND	50	50.9	102	49.8	100	2	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	50	43.4	87	41.4	83	5	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	50	45.5	91	43.0	86	6	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	50	46.8	94	44.9	90	4	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	50	42.9	86	42.2	84	2	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	50	44.9	90	42.6	85	5	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	50	43.3	87	41.7	83	4	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	50	22.6	45	23.7	47	5	40-140/20

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-MS	I70134.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
OP23913-MSD	I70135.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
M97236-1	I70136.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

CAS No.	Compound	M97236-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	ND	50	42.6	85	43.5	87	2	40-140/20
132-64-9	Dibenzofuran	ND	50	41.0	82	40.9	82	0	40-140/20
84-74-2	Di-n-butyl phthalate	ND	50	46.5	93	44.7	89	4	40-140/20
117-84-0	Di-n-octyl phthalate	ND	50	52.1	104	50.8	102	3	40-140/20
84-66-2	Diethyl phthalate	ND	50	44.9	90	43.5	87	3	40-140/20
131-11-3	Dimethyl phthalate	ND	50	43.7	87	42.6	85	3	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND	50	47.4	95	47.2	94	0	40-140/20
206-44-0	Fluoranthene	ND	50	44.7	89	43.3	87	3	40-140/20
86-73-7	Fluorene	ND	50	43.3	87	42.4	85	2	40-140/20
118-74-1	Hexachlorobenzene	ND	50	43.4	87	43.1	86	1	40-140/20
77-47-4	Hexachlorocyclopentadiene	ND	50	25.7	51	26.1	52	2	40-140/20
67-72-1	Hexachloroethane	ND	50	39.4	79	38.2	76	3	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	43.7	87	44.5	89	2	40-140/20
78-59-1	Isophorone	ND	50	42.7	85	40.4	81	6	40-140/20
91-57-6	2-Methylnaphthalene	ND	50	39.9	80	37.8	76	5	40-140/20
88-74-4	2-Nitroaniline	ND	50	44.7	89	43.4	87	3	40-140/20
99-09-2	3-Nitroaniline	ND	50	24.7	49	23.5	47	5	40-140/20
100-01-6	4-Nitroaniline	ND	50	37.7	75	36.9	74	2	40-140/20
91-20-3	Naphthalene	ND	50	43.5	87	41.5	83	5	40-140/20
98-95-3	Nitrobenzene	ND	50	42.7	85	41.5	83	3	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	50	47.6	95	43.9	88	8	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	50	43.9	88	43.0	86	2	40-140/20
85-01-8	Phenanthrene	ND	50	42.8	86	42.4	85	1	40-140/20
129-00-0	Pyrene	ND	50	49.1	98	45.1	90	8	40-140/20
110-86-1	Pyridine	ND	50	25.0	50	27.8	56	11	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	M97236-1	Limits
367-12-4	2-Fluorophenol	55%	52%	40%	15-110%
4165-62-2	Phenol-d5	37%	34%	25%	15-110%
118-79-6	2,4,6-Tribromophenol	79%	78%	55%	15-110%
4165-60-0	Nitrobenzene-d5	83%	81%	63%	30-130%
321-60-8	2-Fluorobiphenyl	82%	83%	62%	30-130%
1718-51-0	Terphenyl-d14	97%	88%	73%	30-130%

6.3.1  
6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97264

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23913-MS	I70134.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
OP23913-MSD	I70135.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468
M97236-1	I70136.D	1	01/29/11	PR	01/20/11	OP23913	MSI2468

The QC reported here applies to the following samples:

Method: SW846 8270C

M97264-1, M97264-2, M97264-3, M97264-4, M97264-5

(a) Outside control limits. Blank Spike meets program technical requirements.

6.3.1  
6



# Semivolatile Internal Standard Area Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSI2468-CC2467	Injection Date:	01/29/11
Lab File ID:	I70130.D	Injection Time:	12:11
Instrument ID:	GCM5I	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	250509	5.88	911140	7.22	444076	9.72	710595	12.27	580512	17.26	553009	19.79
Upper Limit <sup>a</sup>	501018	6.38	1822280	7.72	888152	10.22	1421190	12.77	1161024	17.76	1106018	20.29
Lower Limit <sup>b</sup>	125255	5.38	455570	6.72	222038	9.22	355298	11.77	290256	16.76	276505	19.29

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP23913-MB	188393	5.87	683863	7.22	329104	9.72	544095	12.26	441153	17.24	365090	19.78
OP23913-BS	208546	5.87	797383	7.22	392407	9.72	630887	12.27	494377	17.25	396595	19.79
OP23913-MS	219132	5.87	838690	7.22	423297	9.72	670977	12.27	501242	17.25	402015	19.78
OP23913-MSD	224878	5.87	830977	7.22	390825	9.72	607712	12.27	485637	17.25	417457	19.79
M97236-1	202041	5.87	761431	7.22	367284	9.71	600448	12.26	485206	17.24	404867	19.78
M97264-1	205105	5.87	755007	7.21	369982	9.71	584380	12.26	459658	17.24	395732	19.78
M97264-2	204434	5.87	707640	7.22	329303	9.71	549845	12.26	469484	17.24	401055	19.78
M97264-3	177976	5.87	651785	7.21	325724	9.71	558148	12.26	476988	17.24	400616	19.78
M97264-4	211246	5.87	759289	7.22	375522	9.71	628548	12.26	484059	17.24	416646	19.78
M97264-5	192103	5.87	685348	7.21	329038	9.71	580591	12.26	496354	17.24	416274	19.78
ZZZZZZ	216057	5.87	789492	7.22	380880	9.71	591230	12.26	461599	17.24	403269	19.78
ZZZZZZ	208282	5.88	708869	7.25	388970	9.72	620640	12.27	513599	17.25	606351	19.79
ZZZZZZ	169566	5.87	607632	7.22	289811	9.71	505497	12.26	488636	17.24	412374	19.78
ZZZZZZ	212020	5.87	770665	7.22	377585	9.71	643223	12.26	491351	17.24	415406	19.78
ZZZZZZ	216962	5.87	814065	7.21	401890	9.71	656196	12.26	498609	17.24	432748	19.78
ZZZZZZ	253698	5.87	955726	7.22	451166	9.71	675001	12.26	460851	17.25	597288	19.80
ZZZZZZ	257153	5.87	938540	7.22	458065	9.71	701340	12.26	502315	17.24	418566	19.78
ZZZZZZ	268066	5.87	1001041	7.22	495519	9.71	771632	12.26	492206	17.24	458520	19.79
ZZZZZZ	251215	5.87	914159	7.22	436169	9.71	662471	12.26	483567	17.24	395888	19.78
ZZZZZZ	269243	5.87	977222	7.22	467118	9.71	720609	12.26	514731	17.24	411239	19.78

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.1

6

# Semivolatile Internal Standard Area Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSI2471-CC2467	Injection Date:	02/01/11
Lab File ID:	I70188.D	Injection Time:	17:27
Instrument ID:	GCMSI	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	232445	5.84	875450	7.19	431896	9.68	705637	12.23	618619	17.21	515211	19.75
Upper Limit <sup>a</sup>	464890	6.34	1750900	7.69	863792	10.18	1411274	12.73	1237238	17.71	1030422	20.25
Lower Limit <sup>b</sup>	116223	5.34	437725	6.69	215948	9.18	352819	11.73	309310	16.71	257606	19.25

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
M97264-2	289924	5.83	1052573	7.18	523974	9.68	828893	12.23	650821	17.20	558275	19.75
ZZZZZZ	206639	5.83	759602	7.18	373560	9.68	609909	12.22	518656	17.20	457822	19.75
ZZZZZZ	205997	5.83	767716	7.18	380967	9.68	604068	12.22	532213	17.20	455079	19.75
ZZZZZZ	224785	5.84	845025	7.18	417837	9.68	670899	12.23	566036	17.20	473874	19.75
ZZZZZZ	224558	5.84	830641	7.18	404287	9.68	651871	12.22	557207	17.20	495886	19.75
ZZZZZZ	241570	5.84	898779	7.18	436417	9.68	693689	12.22	566849	17.20	476041	19.74
ZZZZZZ	225977	5.84	835529	7.18	408458	9.68	661746	12.22	537770	17.20	450817	19.74
ZZZZZZ	262238	5.84	983256	7.18	477919	9.68	770093	12.22	647189	17.20	541188	19.75
ZZZZZZ	210212	5.83	777406	7.18	386531	9.68	622246	12.22	517756	17.20	445738	19.75
ZZZZZZ	239389	5.84	880319	7.18	434114	9.68	691265	12.22	574293	17.20	466048	19.75
ZZZZZZ	231106	5.84	867040	7.18	425450	9.68	682385	12.22	567682	17.20	472670	19.74
ZZZZZZ	230499	5.83	847116	7.18	418046	9.68	666460	12.22	550425	17.20	453942	19.74
ZZZZZZ	247518	5.84	919688	7.18	449636	9.68	704842	12.22	565366	17.20	468049	19.75
ZZZZZZ	197995	5.83	730122	7.18	358411	9.68	590038	12.22	514317	17.20	426381	19.74
OP23929-MB	325567	5.83	1200767	7.18	587470	9.68	940383	12.23	789118	17.20	699158	19.75
OP23929-BS	274906	5.83	1028031	7.19	495267	9.68	797267	12.23	683250	17.21	570037	19.75
OP23929-MS	278890	5.83	1028947	7.18	502732	9.68	843706	12.23	714682	17.21	597026	19.75
OP23929-MSD	303471	5.84	1132139	7.19	567068	9.68	932722	12.23	753365	17.22	683154	19.75
M97323-5	292398	5.83	1099863	7.18	556388	9.68	893840	12.23	807470	17.20	715810	19.75
ZZZZZZ	216067	5.83	803542	7.18	402219	9.68	654208	12.23	562806	17.20	494116	19.75
ZZZZZZ	201778	5.83	741364	7.19	365556	9.68	588482	12.23	523789	17.20	462557	19.75
ZZZZZZ	213581	5.83	785084	7.18	395972	9.68	652894	12.22	586676	17.20	508825	19.75

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.42  
**6**

# Semivolatile Surrogate Recovery Summary

Job Number: M97264  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8270C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M97264-1	I70137.D	48.0	32.0	69.0	75.0	74.0	82.0
M97264-2	I70189.D	33.0	23.0	72.0	67.0	68.0	70.0
M97264-2	I70138.D	33.0	20.0	59.0	58.0	60.0	60.0
M97264-3	I70139.D	42.0	27.0	62.0	67.0	67.0	76.0
M97264-4	I70140.D	46.0	29.0	73.0	74.0	73.0	88.0
M97264-5	I70141.D	47.0	29.0	67.0	74.0	73.0	76.0
OP23913-BS	I70133.D	54.0	36.0	76.0	82.0	82.0	91.0
OP23913-MB	I70132.D	44.0	28.0	60.0	69.0	68.0	84.0
OP23913-MS	I70134.D	55.0	37.0	79.0	83.0	82.0	97.0
OP23913-MSD	I70135.D	52.0	34.0	78.0	81.0	83.0	88.0

**Surrogate Compounds**                      **Recovery Limits**

S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

6.5.1

6

# Roxana Groundwater Quarterly – 1st Quarter 2011

Laboratory SDG: M97346

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 2/23/2011

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
MW6C-ROX-012111	MW6D-ROX-012111
MW9-ROX-012111	TB-ROX-012111

## 1.0 Data Package Completeness

*Were all items delivered as specified in the QAPP and COC as appropriate?*

Yes

## 2.0 Laboratory Case Narrative \ Cooler Receipt Form

*Were problems noted in the laboratory case narrative or cooler receipt form?*

Yes, the laboratory case narrative indicated SVOC LCS/LCSD recoveries were outside evaluation criteria. Additionally, diethyl phthalate was detected in the method blank. Although not indicated in the laboratory case narrative, methylene chloride was detected in the trip blank. Several samples were diluted due to high levels of target analyte. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at 0.9°C which was outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required. COC designated samples MW6C-ROX-012111 and MW6D-ROX-012111 were incorrectly transcribed by the laboratory as MWGC-ROX-012111 and MWGD-ROX-012111. Results were reported using the correct sample IDs. Additionally, the cooler receipt form erroneously indicated N/A for the quality control/preservation questions, trip blank present in cooler and trip blank listed on the COC. A trip blank was included in the cooler and it was listed on the COC.

## 3.0 Holding Times

*Were samples extracted/analyzed within applicable limits?*

Yes

## 4.0 Blank Contamination

*Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?*

Yes

Blank ID	Parameter	Analyte	Concentration/Amount
TB-ROX-012111	VOCs	Methylene chloride	1.8 µg/L

Blank ID	Parameter	Analyte	Concentration/Amount
OP23942-MB	SVOCs	Diethyl phthalate	1.8 µg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW6C-ROX-012111	SVOCs	Diethyl phthalate	-	U
MW6D-ROX-012111	SVOCs	Diethyl phthalate	-	U
MW9-ROX-012111	SVOCs	Diethyl phthalate	-	U

## 5.0 Laboratory Control Sample

*Were LCS recoveries within evaluation criteria?*

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
MSE2170-BS/BSD	VOCs	Dichlorodifluoromethane	129/131	2	70-130/25
MSE2170-BS/BSD	VOCs	Isopropylbenzene	126/131	4	70-130/25
MSE2170-BS/BSD	VOCs	Vinyl acetate	65/69	5	70-130/25
OP23942-BS	SVOCs	Benzoic Acid	18	NA	30-130

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Parameter	Analyte	Qualification
MW6C-ROX-012111	VOCs	Vinyl acetate	UJ
MW6C-ROX-012111	SVOCs	Benzoic Acid	UJ
MW6D-ROX-012111	VOCs	Vinyl acetate	UJ
MW6D-ROX-012111	SVOCs	Benzoic Acid	UJ
MW9-ROX-012111	VOCs	Vinyl acetate	UJ
MW9-ROX-012111	SVOCs	Benzoic Acid	UJ

## 6.0 Surrogate Recoveries

*Were surrogate recoveries within evaluation criteria?*

Yes

**7.0 Matrix Spike and Matrix Spike Duplicate Recoveries**

*Were MS/MSD samples analyzed as part of this SDG?*

No

**8.0 Internal Standard (IS) Recoveries**

*Were internal standard area recoveries within evaluation criteria?*

Yes

**9.0 Laboratory Duplicate Results**

*Were laboratory duplicate samples collected as part of this SDG?*

No

**10.0 Field Duplicate Results**

*Were field duplicate samples collected as part of this SDG?*

No

**11.0 Sample Dilutions**

*For samples that were diluted and nondetect, were undiluted results also reported?*

Not applicable; samples analyzed did not require a dilution.

**12.0 Additional Qualifications**

*Were additional qualifications applied?*

No



03/08/11

Technical Report for

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Shell Oil

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

SAP#340061

Accutest Job Number: M97346

Sampling Date: 01/21/11

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Report to:

URS Corporation

Elizabeth\_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

Total number of pages in report: 45

Reviewed  
on  
3/8/2011



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Reza Fand*  
Reza Fand  
Lab Director

Client Service contact: Kristen Blanchard 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.



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### Sample Summary

Shell Oil

Job No: M97346

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
Project No: SAP#340061

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
M97346-1	01/21/11	10:10	01/22/11	AQ	Ground Water	MWGC-ROX-012111 "G"
M97346-2	01/21/11	11:20	01/22/11	AQ	Ground Water	MWGD-ROX-012111 "G"
M97346-3	01/21/11	13:40	01/22/11	AQ	Ground Water	MW9-ROX-012111
M97346-4	01/21/11	00:00	01/22/11	AQ	Trip Blank Water	TB-ROX-012111





New England

ACCUTEST

LABORATORIES



Sample Results

Report of Analysis



Report of Analysis

3.1  
3

Client Sample ID:	MWGC-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-1	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51405.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	8.5	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

"6"

## Report of Analysis

Client Sample ID: MWGC-ROX-012111	Date Sampled: 01/21/11
Lab Sample ID: M97346-1	Date Received: 01/22/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

## VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.1	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"UJ"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	106%		70-130%
2037-26-5	Toluene-D8	111%		70-130%
460-00-4	4-Bromofluorobenzene	108%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID:	MW/GC-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-1	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21218.D	1	02/02/11	PR	01/25/11	OP23942	MSS888
Run #2							

Run #	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.81	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.72	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.73	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.50	ug/l	
	3&4-Methylphenol	ND	11	0.66	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.69	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	ND	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.42	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MWGC-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-1	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.64	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.33	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.35	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	<del>0.84</del> 0.0 ND	5.3	0.64	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.51	ug/l	
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.45	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.30	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.3	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.35	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.35	ug/l	
91-20-3	Naphthalene	ND	5.3	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.64	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		15-110%
4165-62-2	Phenol-d5	24%		15-110%
118-79-6	2,4,6-Tribromophenol	88%		15-110%
4165-60-0	Nitrobenzene-d5	71%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	76%		30-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID:	MWGD-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51406.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	10.4	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

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Client Sample ID:	MWGD-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

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CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	112%		70-130%
2037-26-5	Toluene-D8	113%		70-130%
460-00-4	4-Bromofluorobenzene	110%		70-130%

ND = Not detected MDL - Method Detection Limit  
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 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

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## Report of Analysis

Client Sample ID:	MWCD-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21219.D	1	02/02/11	PR	01/25/11	OP23942	MSS888

Run #1	Initial Volume	Final Volume
Run #2	950 ml	1.0 ml

### ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.81	ug/l	"uJ"
95-57-8	2-Chlorophenol	ND	5.3	0.72	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.73	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.50	ug/l	
	3&4-Methylphenol	ND	11	0.66	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.69	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	ND	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.42	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID:	MWGD-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.64	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.33	ug/l	
84-74-2	Di-n-butyl phthalate	0.71	5.3	0.35	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	1.06.OND	5.3	0.64	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.51	ug/l	
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.45	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.30	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.3	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.35	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.35	ug/l	
91-20-3	Naphthalene	ND	5.3	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.64	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		15-110%
4165-62-2	Phenol-d5	24%		15-110%
118-79-6	2,4,6-Tribromophenol	90%		15-110%
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	78%		30-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

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3

Client Sample ID:	MW9-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51407.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	3.7	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW9-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"uJ"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-130%
2037-26-5	Toluene-D8	107%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID:	MW9-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21220.D	1	02/02/11	PR	01/25/11	OP23942	MSS888

Run #1	Initial Volume	Final Volume
Run #2	950 ml	1.0 ml

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.81	ug/l	"0.5"
95-57-8	2-Chlorophenol	ND	5.3	0.72	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.73	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.50	ug/l	
	3&4-Methylphenol	ND	11	0.66	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.69	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	ND	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.42	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



Report of Analysis

Client Sample ID:	MW9-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.64	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.33	ug/l	
84-74-2	Di-n-butyl phthalate	0.64	5.3	0.35	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	<del>ND</del> 0.00ND	5.3	0.64	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.51	ug/l	
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.45	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.30	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.3	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.35	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.35	ug/l	
91-20-3	Naphthalene	ND	5.3	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.64	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	39%		15-110%
4165-62-2	Phenol-d5	24%		15-110%
118-79-6	2,4,6-Tribromophenol	82%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	75%		30-130%
1718-51-0	Terphenyl-d14	73%		30-130%

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-4	Date Received:	01/22/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51400.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB-ROX-012111	Date Sampled:	01/21/11
Lab Sample ID:	M97346-4	Date Received:	01/22/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA Special List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropane	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	1.8	2.0	0.75	ug/l	J
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-130%
2037-26-5	Toluene-D8	114%		70-130%
460-00-4	4-Bromofluorobenzene	110%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



**Misc. Forms**

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**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

LAB (LOCATION)

FLEET  
 CAUSEWAY  
 OFFICE (Northborough, MA 01522-5008-481, 8000)  
 Lab Vendor #



Shell Oil Products Chain Of Custody Record

M97346

Please Check Appropriate Box:  
 INV. SERVICES  
 MOTVA RETAIL  
 SHILL RETAIL  
 MOTVA SMOCK  
 COMPLAINT  
 LURES  
 SHILL PIPELINE  
 OTHER

Print Bill To Contact Name: WENDY PENNINGTON  
 INCIDENT # (ENVY SERVICES) 97211040  
 DATE: 1/21/11  
 PO # SAP #  
 PAGE 1 of 1

URS CORPORATION  
 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110  
 WENDY PENNINGTON  
 314-743-4168 or 314-452-8329 314-429-0462  
 LABORATORY TYPE (CHECK ONE)  
 STANDARD (LA 807)  5 DAYS  3 DAYS  2 DAYS  24 HOURS  ANALYSIS NEEDED ON REQUEST  
 LA - ANALYSIS REPORT FORMAT  LIST AGENCY  
 DELIVERY/DATE ON RECEIPT:  LEVEL 1  LEVEL 2  LEVEL 3  LEVEL 4  OTHER (SPECIFY) EDD  
 TEMPERATURE ON RECEIPT:  Cooler #1  Cooler #2  Cooler #3

170 EAST RAND AVENUE - HARTFORD  
 603-281-1111  
 Request a Quote/Ref: 21549583.00003

SPECIAL INSTRUCTIONS OR NOTES:  
 SHELL CONTRACT RATE APPLIES  
 STATE SUBSIDIZATION RATE APPLIES  
 (DO NOT CHECK)  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEAD DESK

REQUESTED ANALYSIS

LAB USE ONLY	Field Sample Identification		SAMPLING		MARKER	PRESERVATIVE				ML OF CONT.	VOC 8260B	SVOC 8270C	PTD (ppm)	FIELD NOTES:
	DATE	TIME	DATE	TIME		HEX	ACET	PCSOA	NOPE					
	1/21/11	10:18	1/21/11	10:18	3									
	1/21/11	11:28	1/21/11	11:28	3									
	1/21/11	12:13	1/21/11	12:13	3									
	1/21/11		1/21/11		2									

Received by (Signature): *[Signature]* Date: 1/21/11 Time: 1430  
 Prepared by (Signature): *[Signature]* Date: 1-22-11 Time: 1020  
 F.E.D.

Loc: 562, 16F

0.9°C

4.1  
4



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: M97346 Client: URS Immediate Client Services Action Required: No  
 Date / Time Received: 1/22/2011 Delivery Method: \_\_\_\_\_ Client Service Action Required at Login: No  
 Project: \_\_\_\_\_ No. Coolers: 1 Airbill #'s: \_\_\_\_\_

**Cooler Security** Y or N Y or N  
 1. Custody Seals Present:   3. COC Present:    
 2. Custody Seals Intact:   4. Smpl Dates/Time OK:

**Cooler Temperature** Y or N  
 1. Temp criteria achieved:    
 2. Cooler temp verification: Infrared gun  
 3. Cooler media: Ice (bag)

**Quality Control Preservation** Y or N N/A  
 1. Trip Blank present / cooler:     
 2. Trip Blank listed on COC:     
 3. Samples preserved properly:    
 4. VOCs headspace free:

**Sample Integrity - Documentation** Y or N  
 1. Sample labels present on bottles:    
 2. Container labeling complete:    
 3. Sample container label / COC agree:

**Sample Integrity - Condition** Y or N  
 1. Sample recvd within HT:    
 2. All containers accounted for:    
 3. Condition of sample: Intact

**Sample Integrity - Instructions** Y or N N/A  
 1. Analysis requested is clear:    
 2. Bottles received for unspecified tests:    
 3. Sufficient volume recvd for analysis:    
 4. Compositing Instructions clear:     
 5. Filtering Instructions clear:

Comments

4.1  
4

M97346: Chain of Custody  
Page 2 of 2

### Internal Sample Tracking Chronicle

Shell Oil

Job No: M97346

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

4.2  
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M97346-1 Collected: 21-JAN-11 10:10 By: MWGC-ROX-012111 Received: 22-JAN-11 By: BC						
M97346-1	SW846 8260B	31-JAN-11 17:09	TD			V8260STD
M97346-1	SW846 8270C	02-FEB-11 15:09	PR	25-JAN-11	BJ	AB8270PPL
M97346-2 Collected: 21-JAN-11 11:20 By: MWGD-ROX-012111 Received: 22-JAN-11 By: BC						
M97346-2	SW846 8260B	31-JAN-11 17:38	TD			V8260STD
M97346-2	SW846 8270C	02-FEB-11 15:37	PR	25-JAN-11	BJ	AB8270PPL
M97346-3 Collected: 21-JAN-11 13:40 By: MW9-ROX-012111 Received: 22-JAN-11 By: BC						
M97346-3	SW846 8260B	31-JAN-11 18:07	TD			V8260STD
M97346-3	SW846 8270C	02-FEB-11 16:04	PR	25-JAN-11	BJ	AB8270PPL
M97346-4 Collected: 21-JAN-11 00:00 By: TB-ROX-012111 Received: 22-JAN-11 By: BC						
M97346-4	SW846 8260B	31-JAN-11 14:50	TD			V8260STD

# Accutest Internal Chain of Custody

Job Number: M97346  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
Received: 01/22/11

4.3  
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97346-1.3	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97346-1.3	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97346-1.3	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97346-1.3	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97346-1.5	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97346-1.5	Michael Widuta		01/25/11 14:02	Depleted
M97346-2.2	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97346-2.2	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97346-2.2	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97346-2.2	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97346-2.5	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97346-2.5	Michael Widuta		01/25/11 14:02	Depleted
M97346-3.3	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97346-3.3	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97346-3.3	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97346-3.3	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97346-3.4	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97346-3.4	Michael Widuta		01/25/11 14:02	Depleted
M97346-4.2	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97346-4.2	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97346-4.2	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97346-4.2	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage



GC/MS Volatiles



QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-MB	E51394.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97346-1, M97346-2, M97346-3, M97346-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.1  
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# Method Blank Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-MB	E51394.D	1	01/31/11	TD	n/a	n/a	MSE2170

5.1.1  
**5**

The QC reported here applies to the following samples:

Method: SW846 8260B

M97346-1, M97346-2, M97346-3, M97346-4

CAS No.	Compound	Result	RL	MDL	Units	Q
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	112%	70-130%
2037-26-5	Toluene-D8	116%	70-130%
460-00-4	4-Bromofluorobenzene	110%	70-130%

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-BS	E51391.D	1	01/31/11	TD	n/a	n/a	MSE2170
MSE2170-BSD	E51392.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97346-1, M97346-2, M97346-3, M97346-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	62.5	125	57.6	115	8	70-130/25
71-43-2	Benzene	50	54.7	109	55.9	112	2	70-130/25
108-86-1	Bromobenzene	50	52.4	105	54.8	110	4	70-130/25
74-97-5	Bromochloromethane	50	50.5	101	51.3	103	2	70-130/25
75-27-4	Bromodichloromethane	50	53.3	107	53.7	107	1	70-130/25
75-25-2	Bromoform	50	46.8	94	46.5	93	1	70-130/25
74-83-9	Bromomethane	50	49.1	98	48.8	98	1	70-130/25
78-93-3	2-Butanone (MEK)	50	51.3	103	49.4	99	4	70-130/25
104-51-8	n-Butylbenzene	50	58.3	117	60.0	120	3	70-130/25
135-98-8	sec-Butylbenzene	50	56.6	113	57.9	116	2	70-130/25
98-06-6	tert-Butylbenzene	50	57.9	116	59.8	120	3	70-130/25
75-15-0	Carbon disulfide	50	57.1	114	58.5	117	2	70-130/25
56-23-5	Carbon tetrachloride	50	55.6	111	56.5	113	2	70-130/25
108-90-7	Chlorobenzene	50	52.2	104	54.5	109	4	70-130/25
75-00-3	Chloroethane	50	51.0	102	52.5	105	3	70-130/25
67-66-3	Chloroform	50	52.9	106	54.3	109	3	70-130/25
74-87-3	Chloromethane	50	49.8	100	51.4	103	3	70-130/25
95-49-8	o-Chlorotoluene	50	55.5	111	57.8	116	4	70-130/25
106-43-4	p-Chlorotoluene	50	56.2	112	57.6	115	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	42.8	86	42.5	85	1	70-130/25
124-48-1	Dibromochloromethane	50	49.2	98	50.9	102	3	70-130/25
95-50-1	1,2-Dichlorobenzene	50	51.7	103	53.6	107	4	70-130/25
541-73-1	1,3-Dichlorobenzene	50	50.5	101	52.2	104	3	70-130/25
106-46-7	1,4-Dichlorobenzene	50	55.3	111	56.6	113	2	70-130/25
75-71-8	Dichlorodifluoromethane	50	64.5	129	65.5	131* <sup>a</sup>	2	70-130/25
75-34-3	1,1-Dichloroethane	50	53.2	106	55.3	111	4	70-130/25
107-06-2	1,2-Dichloroethane	50	49.5	99	50.4	101	2	70-130/25
75-35-4	1,1-Dichloroethene	50	52.7	105	54.0	108	2	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	47.5	95	47.9	96	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	50.5	101	52.3	105	4	70-130/25
78-87-5	1,2-Dichloropropane	50	51.2	102	51.6	103	1	70-130/25
142-28-9	1,3-Dichloropropane	50	47.3	95	47.6	95	1	70-130/25
594-20-7	2,2-Dichloropropane	50	58.3	117	59.6	119	2	70-130/25
563-58-6	1,1-Dichloropropene	50	53.8	108	55.3	111	3	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	53.8	108	55.2	110	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	55.5	111	58.2	116	5	70-130/25

5.2.1

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# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-BS	E51391.D	1	01/31/11	TD	n/a	n/a	MSE2170
MSE2170-BSD	E51392.D	1	01/31/11	TD	n/a	n/a	MSE2170

5.2.1  
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The QC reported here applies to the following samples:

Method: SW846 8260B

M97346-1, M97346-2, M97346-3, M97346-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	50	53.5	107	55.3	111	3	70-130/25
87-68-3	Hexachlorobutadiene	50	60.8	122	63.7	127	5	70-130/25
98-82-8	Isopropylbenzene	50	62.9	126	65.7	131* a	4	70-130/25
99-87-6	p-Isopropyltoluene	50	58.3	117	59.7	119	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	41.1	82	42.0	84	2	70-130/25
74-95-3	Methylene bromide	50	50.1	100	50.6	101	1	70-130/25
75-09-2	Methylene chloride	50	50.4	101	51.9	104	3	70-130/25
103-65-1	n-Propylbenzene	50	54.7	109	56.5	113	3	70-130/25
100-42-5	Styrene	50	49.1	98	50.3	101	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	53.5	107	53.9	108	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	47.2	94	48.5	97	3	70-130/25
127-18-4	Tetrachloroethene	50	50.2	100	51.2	102	2	70-130/25
108-88-3	Toluene	50	50.6	101	51.7	103	2	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	43.3	87	46.2	92	6	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	49.1	98	51.7	103	5	70-130/25
71-55-6	1,1,1-Trichloroethane	50	52.8	106	53.6	107	2	70-130/25
79-00-5	1,1,2-Trichloroethane	50	48.9	98	50.9	102	4	70-130/25
79-01-6	Trichloroethene	50	54.3	109	55.2	110	2	70-130/25
75-69-4	Trichlorofluoromethane	50	55.2	110	55.6	111	1	70-130/25
96-18-4	1,2,3-Trichloropropane	50	44.3	89	46.2	92	4	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	54.6	109	56.6	113	4	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	55.0	110	56.4	113	3	70-130/25
108-05-4	Vinyl Acetate	50	32.6	65* a	34.4	69* a	5	70-130/25
75-01-4	Vinyl chloride	50	51.2	102	53.1	106	4	70-130/25
	m,p-Xylene	100	107	107	111	111	4	70-130/25
95-47-6	o-Xylene	50	48.8	98	49.4	99	1	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	111%	70-130%
2037-26-5	Toluene-D8	115%	116%	70-130%
460-00-4	4-Bromofluorobenzene	112%	114%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97347-3MS	E51402.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3MSD	E51403.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3	E51401.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97346-1, M97346-2, M97346-3, M97346-4

CAS No.	Compound	M97347-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	229	92	232	93	1	70-130/30
71-43-2	Benzene	8.2	250	282	110	288	112	2	70-130/30
108-86-1	Bromobenzene	ND	250	261	104	274	110	5	70-130/30
74-97-5	Bromochloromethane	ND	250	254	102	260	104	2	70-130/30
75-27-4	Bromodichloromethane	ND	250	243	97	252	101	4	70-130/30
75-25-2	Bromoform	ND	250	178	71	179	72	1	70-130/30
74-83-9	Bromomethane	ND	250	260	104	263	105	1	70-130/30
78-93-3	2-Butanone (MEK)	ND	250	244	98	200	80	20	70-130/30
104-51-8	n-Butylbenzene	ND	250	290	116	308	123	6	70-130/30
135-98-8	sec-Butylbenzene	ND	250	283	113	300	120	6	70-130/30
98-06-6	tert-Butylbenzene	ND	250	282	113	301	120	7	70-130/30
75-15-0	Carbon disulfide	ND	250	236	94	240	96	2	70-130/30
56-23-5	Carbon tetrachloride	ND	250	280	112	289	116	3	70-130/30
108-90-7	Chlorobenzene	ND	250	269	108	273	109	1	70-130/30
75-00-3	Chloroethane	ND	250	267	107	276	110	3	70-130/30
67-66-3	Chloroform	ND	250	274	110	276	110	1	70-130/30
74-87-3	Chloromethane	ND	250	278	111	284	114	2	70-130/30
95-49-8	o-Chlorotoluene	ND	250	275	110	291	116	6	70-130/30
106-43-4	p-Chlorotoluene	ND	250	279	112	293	117	5	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	195	78	204	82	5	70-130/30
124-48-1	Dibromochloromethane	ND	250	211	84	217	87	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	250	255	102	265	106	4	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	250	252	101	258	103	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	250	273	109	280	112	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND	250	348	139* a	350	140* a	1	70-130/30
75-34-3	1,1-Dichloroethane	ND	250	278	111	287	115	3	70-130/30
107-06-2	1,2-Dichloroethane	ND	250	237	95	244	98	3	70-130/30
75-35-4	1,1-Dichloroethene	ND	250	273	109	282	113	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	250	240	96	248	99	3	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	250	260	104	268	107	3	70-130/30
78-87-5	1,2-Dichloropropane	ND	250	254	102	266	106	5	70-130/30
142-28-9	1,3-Dichloropropane	ND	250	230	92	242	97	5	70-130/30
594-20-7	2,2-Dichloropropane	ND	250	303	121	305	122	1	70-130/30
563-58-6	1,1-Dichloropropene	ND	250	277	111	282	113	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	250	244	98	252	101	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	250	247	99	256	102	4	70-130/30

5.3.1

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# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97347-3MS	E51402.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3MSD	E51403.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3	E51401.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97346-1, M97346-2, M97346-3, M97346-4

CAS No.	Compound	M97347-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	ND	250	270	108	282	113	4	70-130/30
87-68-3	Hexachlorobutadiene	ND	250	311	124	334	134* a	7	70-130/30
98-82-8	Isopropylbenzene	ND	250	315	126	336	134* a	6	70-130/30
99-87-6	p-Isopropyltoluene	ND	250	290	116	307	123	6	70-130/30
1634-04-4	Methyl Tert Butyl Ether	1.6	250	200	79	209	83	4	70-130/30
74-95-3	Methylene bromide	ND	250	250	100	249	100	0	70-130/30
75-09-2	Methylene chloride	ND	250	256	102	265	106	3	70-130/30
103-65-1	n-Propylbenzene	ND	250	275	110	290	116	5	70-130/30
100-42-5	Styrene	ND	250	209	84	215	86	3	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	269	108	277	111	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	232	93	236	94	2	70-130/30
127-18-4	Tetrachloroethene	ND	250	256	102	264	106	3	70-130/30
108-88-3	Toluene	ND	250	251	100	254	102	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	250	216	86	232	93	7	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	250	238	95	260	104	9	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	250	279	112	282	113	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	250	248	99	243	97	2	70-130/30
79-01-6	Trichloroethene	ND	250	270	108	275	110	2	70-130/30
75-69-4	Trichlorofluoromethane	ND	250	293	117	304	122	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	250	204	82	218	87	7	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	250	254	102	272	109	7	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	250	261	104	279	112	7	70-130/30
108-05-4	Vinyl Acetate	ND	250	149	60* a	160	64* a	7	70-130/30
75-01-4	Vinyl chloride	ND	250	276	110	284	114	3	70-130/30
	m,p-Xylene	ND	500	538	108	556	111	3	70-130/30
95-47-6	o-Xylene	ND	250	243	97	250	100	3	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97347-3	Limits
1868-53-7	Dibromofluoromethane	108%	110%	114%	70-130%
2037-26-5	Toluene-D8	112%	113%	118%	70-130%
460-00-4	4-Bromofluorobenzene	108%	115%	112%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

5.3.1  
5

# Volatile Internal Standard Area Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSE2170-CC2152	Injection Date:	01/31/11
Lab File ID:	E51390.D	Injection Time:	10:10
Instrument ID:	GCMSE	Method:	SW846 8260B

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	258610	9.10	421768	9.98	186730	13.24	181279	15.80	45421	6.61
Upper Limit <sup>a</sup>	517220	9.60	843536	10.48	373460	13.74	362558	16.30	90842	7.11
Lower Limit <sup>b</sup>	129305	8.60	210884	9.48	93365	12.74	90640	15.30	22711	6.11

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MSE2170-BS	260644	9.10	422955	9.97	189126	13.24	176962	15.80	43862	6.61
MSE2170-BSD	255699	9.10	415613	9.97	185442	13.24	172080	15.80	44740	6.60
MSE2170-MB	242359	9.09	389164	9.97	166698	13.24	158217	15.80	39770	6.61
ZZZZZZ	236819	9.10	380812	9.97	162514	13.25	153840	15.80	37004	6.61
ZZZZZZ	250666	9.10	399919	9.98	168270	13.24	160247	15.81	40885	6.61
ZZZZZZ	246889	9.10	397174	9.98	165727	13.24	161053	15.80	42108	6.60
ZZZZZZ	236949	9.10	380012	9.98	162471	13.24	151386	15.81	33128	6.61
ZZZZZZ	238982	9.10	383811	9.97	163262	13.24	156243	15.80	40223	6.61
M97346-4	237548	9.10	376532	9.97	161884	13.25	151687	15.80	35730	6.62
M97347-3	233433	9.09	374476	9.98	157549	13.24	149198	15.80	37233	6.60
M97347-3MS	242688	9.10	398125	9.97	176314	13.24	170130	15.80	37199	6.61
M97347-3MSD	244229	9.09	400072	9.98	174295	13.24	163410	15.80	36875	6.60
ZZZZZZ	237201	9.09	378277	9.97	157690	13.24	153787	15.80	36247	6.60
M97346-1	241972	9.10	382213	9.98	164786	13.24	151740	15.80	36929	6.61
M97346-2	233061	9.10	376272	9.97	158030	13.24	147882	15.80	35185	6.61
M97346-3	237457	9.10	381939	9.97	162081	13.24	154036	15.80	34352	6.60
ZZZZZZ	225056	9.09	367319	9.97	153964	13.24	145320	15.80	34019	6.61
ZZZZZZ	220505	9.09	361291	9.98	153410	13.24	142387	15.80	35261	6.60
ZZZZZZ	222436	9.10	354027	9.97	150787	13.24	146005	15.80	31157	6.61
ZZZZZZ	223741	9.09	352296	9.98	156478	13.24	144588	15.80	36835	6.60
ZZZZZZ	220666	9.10	355602	9.98	151629	13.24	144221	15.80	35853	6.61
ZZZZZZ	223768	9.09	361745	9.97	153859	13.24	143640	15.80	32181	6.60
ZZZZZZ	215077	9.10	356557	9.97	153432	13.24	142576	15.80	32321	6.60

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.4.1  
**5**



# Volatile Surrogate Recovery Summary

Job Number: M97346

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8260B

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M97346-1	E51405.D	106.0	111.0	108.0
M97346-2	E51406.D	112.0	113.0	110.0
M97346-3	E51407.D	110.0	107.0	106.0
M97346-4	E51400.D	110.0	114.0	110.0
M97347-3MS	E51402.D	108.0	112.0	108.0
M97347-3MSD	E51403.D	110.0	113.0	115.0
MSE2170-BS	E51391.D	109.0	115.0	112.0
MSE2170-BSD	E51392.D	111.0	116.0	114.0
MSE2170-MB	E51394.D	112.0	116.0	110.0

Surrogate Compounds	Recovery Limits
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S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

## GC/MS Semi-volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MB	I70221.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	

6.1.1

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# Method Blank Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MB	I70221.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

6.1.1

6

CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	1.8	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	43%	15-110%
4165-62-2	Phenol-d5	26%	15-110%
118-79-6	2,4,6-Tribromophenol	65%	15-110%
4165-60-0	Nitrobenzene-d5	74%	30-130%
321-60-8	2-Fluorobiphenyl	73%	30-130%
1718-51-0	Terphenyl-d14	82%	30-130%

# Blank Spike Summary

Job Number: M97346  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-BS	I70222.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	18.3	18* a	30-130
95-57-8	2-Chlorophenol	100	78.4	78	30-130
59-50-7	4-Chloro-3-methyl phenol	100	84.5	85	30-130
120-83-2	2,4-Dichlorophenol	100	85.8	86	30-130
105-67-9	2,4-Dimethylphenol	100	76.4	76	30-130
51-28-5	2,4-Dinitrophenol	100	86.5	87	30-130
534-52-1	4,6-Dinitro-o-cresol	100	85.1	85	30-130
95-48-7	2-Methylphenol	100	72.7	73	30-130
	3&4-Methylphenol	200	133	67	30-130
88-75-5	2-Nitrophenol	100	85.5	86	30-130
100-02-7	4-Nitrophenol	100	46.5	47	30-130
87-86-5	Pentachlorophenol	100	78.1	78	30-130
108-95-2	Phenol	100	34.1	34	30-130
95-95-4	2,4,5-Trichlorophenol	100	85.1	85	30-130
88-06-2	2,4,6-Trichlorophenol	100	85.2	85	30-130
83-32-9	Acenaphthene	50	43.2	86	40-140
208-96-8	Acenaphthylene	50	35.3	71	40-140
62-53-3	Aniline	50	32.3	65	40-140
120-12-7	Anthracene	50	41.9	84	40-140
56-55-3	Benzo(a)anthracene	50	47.4	95	40-140
50-32-8	Benzo(a)pyrene	50	39.3	79	40-140
205-99-2	Benzo(b)fluoranthene	50	44.9	90	40-140
191-24-2	Benzo(g,h,i)perylene	50	35.4	71	40-140
207-08-9	Benzo(k)fluoranthene	50	45.6	91	40-140
101-55-3	4-Bromophenyl phenyl ether	50	42.3	85	40-140
85-68-7	Butyl benzyl phthalate	50	46.2	92	40-140
91-58-7	2-Chloronaphthalene	50	42.1	84	40-140
106-47-8	4-Chloroaniline	50	34.8	70	40-140
218-01-9	Chrysene	50	50.1	100	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	41.7	83	40-140
111-44-4	bis(2-Chloroethyl)ether	50	43.3	87	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	45.3	91	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	43.9	88	40-140
121-14-2	2,4-Dinitrotoluene	50	44.9	90	40-140
606-20-2	2,6-Dinitrotoluene	50	43.6	87	40-140
91-94-1	3,3'-Dichlorobenzidine	50	38.2	76	40-140

# Blank Spike Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-BS	I70222.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
53-70-3	Dibenzo(a,h)anthracene	50	37.7	75	40-140
132-64-9	Dibenzofuran	50	41.9	84	40-140
84-74-2	Di-n-butyl phthalate	50	45.7	91	40-140
117-84-0	Di-n-octyl phthalate	50	51.7	103	40-140
84-66-2	Diethyl phthalate	50	46.7	93	40-140
131-11-3	Dimethyl phthalate	50	44.7	89	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	48.1	96	40-140
206-44-0	Fluoranthene	50	46.0	92	40-140
86-73-7	Fluorene	50	44.3	89	40-140
118-74-1	Hexachlorobenzene	50	42.6	85	40-140
77-47-4	Hexachlorocyclopentadiene	50	30.2	60	40-140
67-72-1	Hexachloroethane	50	38.6	77	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	37.7	75	40-140
78-59-1	Isophorone	50	41.5	83	40-140
91-57-6	2-Methylnaphthalene	50	39.4	79	40-140
88-74-4	2-Nitroaniline	50	44.6	89	40-140
99-09-2	3-Nitroaniline	50	34.9	70	40-140
100-01-6	4-Nitroaniline	50	42.0	84	40-140
91-20-3	Naphthalene	50	42.4	85	40-140
98-95-3	Nitrobenzene	50	41.4	83	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	46.3	93	40-140
86-30-6	N-Nitrosodiphenylamine	50	43.0	86	40-140
85-01-8	Phenanthrene	50	43.1	86	40-140
129-00-0	Pyrene	50	43.8	88	40-140
110-86-1	Pyridine	50	26.1	52	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	50%	15-110%
4165-62-2	Phenol-d5	32%	15-110%
118-79-6	2,4,6-Tribromophenol	78%	15-110%
4165-60-0	Nitrobenzene-d5	83%	30-130%
321-60-8	2-Fluorobiphenyl	81%	30-130%
1718-51-0	Terphenyl-d14	85%	30-130%

6.2.1

6

# Blank Spike Summary

Job Number: M97346

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-BS	I70222.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

6.2.1

6

(a) Outside control limits. Blank Spike meets program technical requirements.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MS	I70223.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
OP23942-MSD	I70224.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
M97378-1	I70225.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

CAS No.	Compound	M97378-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	100	20.3	20* a	22.4	22* a	10	30-130/20	
95-57-8	2-Chlorophenol	ND	100	79.9	80	76.7	77	4	30-130/20	
59-50-7	4-Chloro-3-methyl phenol	ND	100	88.6	89	84.6	85	5	30-130/20	
120-83-2	2,4-Dichlorophenol	ND	100	87.5	88	84.5	85	3	30-130/20	
105-67-9	2,4-Dimethylphenol	ND	100	69.4	69	68.8	69	1	30-130/20	
51-28-5	2,4-Dinitrophenol	ND	100	88.8	89	89.1	89	0	30-130/20	
534-52-1	4,6-Dinitro-o-cresol	ND	100	87.3	87	88.7	89	2	30-130/20	
95-48-7	2-Methylphenol	ND	100	71.7	72	70.4	70	2	30-130/20	
	3&4-Methylphenol	ND	200	134	67	129	65	4	30-130/20	
88-75-5	2-Nitrophenol	ND	100	87.8	88	85.1	85	3	30-130/20	
100-02-7	4-Nitrophenol	ND	100	45.4	45	45.2	45	0	30-130/20	
87-86-5	Pentachlorophenol	ND	100	83.9	84	80.8	81	4	30-130/20	
108-95-2	Phenol	ND	100	34.0	34	33.4	33	2	30-130/20	
95-95-4	2,4,5-Trichlorophenol	ND	100	87.0	87	82.6	83	5	30-130/20	
88-06-2	2,4,6-Trichlorophenol	ND	100	87.2	87	84.2	84	4	30-130/20	
83-32-9	Acenaphthene	ND	50	43.5	87	41.1	82	6	40-140/20	
208-96-8	Acenaphthylene	ND	50	36.2	72	34.9	70	4	40-140/20	
62-53-3	Aniline	ND	50	24.7	49	27.8	56	12	40-140/20	
120-12-7	Anthracene	ND	50	41.6	83	40.6	81	2	40-140/20	
56-55-3	Benzo(a)anthracene	ND	50	48.5	97	46.8	94	4	40-140/20	
50-32-8	Benzo(a)pyrene	ND	50	40.5	81	39.0	78	4	40-140/20	
205-99-2	Benzo(b)fluoranthene	ND	50	46.3	93	43.9	88	5	40-140/20	
191-24-2	Benzo(g,h,i)perylene	ND	50	35.8	72	33.5	67	7	40-140/20	
207-08-9	Benzo(k)fluoranthene	ND	50	47.3	95	47.0	94	1	40-140/20	
101-55-3	4-Bromophenyl phenyl ether	ND	50	43.4	87	41.8	84	4	40-140/20	
85-68-7	Butyl benzyl phthalate	ND	50	46.9	94	45.6	91	3	40-140/20	
91-58-7	2-Chloronaphthalene	ND	50	43.0	86	41.3	83	4	40-140/20	
106-47-8	4-Chloroaniline	ND	50	18.3	37* a	21.2	42	15	40-140/20	
218-01-9	Chrysene	ND	50	51.4	103	48.5	97	6	40-140/20	
111-91-1	bis(2-Chloroethoxy)methane	ND	50	43.1	86	41.6	83	4	40-140/20	
111-44-4	bis(2-Chloroethyl)ether	ND	50	44.8	90	41.7	83	7	40-140/20	
108-60-1	bis(2-Chloroisopropyl)ether	ND	50	46.0	92	41.6	83	10	40-140/20	
7005-72-3	4-Chlorophenyl phenyl ether	ND	50	43.7	87	41.1	82	6	40-140/20	
121-14-2	2,4-Dinitrotoluene	ND	50	44.9	90	43.9	88	2	40-140/20	
606-20-2	2,6-Dinitrotoluene	ND	50	44.3	89	43.3	87	2	40-140/20	
91-94-1	3,3'-Dichlorobenzidine	ND	50	29.1	58	28.9	58	1	40-140/20	

6.3.1

6



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MS	I70223.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
OP23942-MSD	I70224.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
M97378-1	I70225.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

CAS No.	Compound	M97378-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	ND	50	38.2	76	36.1	72	6	40-140/20
132-64-9	Dibenzofuran	ND	50	42.2	84	40.3	81	5	40-140/20
84-74-2	Di-n-butyl phthalate	ND	50	45.8	92	44.8	90	2	40-140/20
117-84-0	Di-n-octyl phthalate	ND	50	53.7	107	52.7	105	2	40-140/20
84-66-2	Diethyl phthalate	1.6	50	46.8	90	45.2	87	3	40-140/20
131-11-3	Dimethyl phthalate	ND	50	44.7	89	43.7	87	2	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND	50	49.1	98	47.7	95	3	40-140/20
206-44-0	Fluoranthene	ND	50	46.1	92	44.1	88	4	40-140/20
86-73-7	Fluorene	ND	50	44.4	89	42.1	84	5	40-140/20
118-74-1	Hexachlorobenzene	ND	50	43.7	87	41.6	83	5	40-140/20
77-47-4	Hexachlorocyclopentadiene	ND	50	31.4	63	30.8	62	2	40-140/20
67-72-1	Hexachloroethane	ND	50	39.5	79	37.4	75	5	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	38.4	77	36.6	73	5	40-140/20
78-59-1	Isophorone	ND	50	43.0	86	41.3	83	4	40-140/20
91-57-6	2-Methylnaphthalene	ND	50	41.0	82	38.3	77	7	40-140/20
88-74-4	2-Nitroaniline	ND	50	45.3	91	44.0	88	3	40-140/20
99-09-2	3-Nitroaniline	ND	50	21.9	44	24.6	49	12	40-140/20
100-01-6	4-Nitroaniline	ND	50	38.6	77	38.8	78	1	40-140/20
91-20-3	Naphthalene	ND	50	43.8	88	41.9	84	4	40-140/20
98-95-3	Nitrobenzene	ND	50	42.0	84	40.8	82	3	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND	50	48.1	96	44.5	89	8	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND	50	44.3	89	42.5	85	4	40-140/20
85-01-8	Phenanthrene	ND	50	43.6	87	42.4	85	3	40-140/20
129-00-0	Pyrene	ND	50	44.4	89	43.0	86	3	40-140/20
110-86-1	Pyridine	ND	50	24.9	50	28.2	56	12	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	M97378-1	Limits
367-12-4	2-Fluorophenol	49%	49%	35%	15-110%
4165-62-2	Phenol-d5	31%	31%	21%	15-110%
118-79-6	2,4,6-Tribromophenol	78%	76%	59%	15-110%
4165-60-0	Nitrobenzene-d5	84%	80%	64%	30-130%
321-60-8	2-Fluorobiphenyl	82%	78%	65%	30-130%
1718-51-0	Terphenyl-d14	86%	85%	73%	30-130%

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97346

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MS	I70223.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
OP23942-MSD	I70224.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
M97378-1	I70225.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97346-1, M97346-2, M97346-3

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

6.3.1

6

# Semivolatle Internal Standard Area Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSI2472-CC2467	Injection Date:	02/02/11
Lab File ID:	I70217.D	Injection Time:	12:31
Instrument ID:	GCMSI	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	292933	5.83	1097131	7.18	550055	9.67	902740	12.22	810859	17.20	707204	19.75
Upper Limit <sup>a</sup>	585866	6.33	2194262	7.68	1100110	10.17	1805480	12.72	1621718	17.70	1414408	20.25
Lower Limit <sup>b</sup>	146467	5.33	548566	6.68	275028	9.17	451370	11.72	405430	16.70	353602	19.25

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	283222	5.83	1084662	7.17	544971	9.67	894222	12.21	748949	17.19	641120	19.74
ZZZZZZ	304905	5.83	1164586	7.17	591102	9.67	965005	12.22	818052	17.20	700266	19.74
OP23942-MB	273706	5.83	1040413	7.17	527168	9.67	860523	12.22	743118	17.19	658728	19.74
OP23942-BS	252157	5.83	957662	7.17	473238	9.67	775808	12.22	689687	17.20	627759	19.74
OP23942-MS	260122	5.83	989310	7.17	500497	9.67	814896	12.22	722322	17.20	642526	19.74
OP23942-MSD	299395	5.83	1118022	7.17	551394	9.67	881335	12.22	765990	17.20	661545	19.74
M97378-1	262832	5.83	990445	7.17	495978	9.67	810599	12.21	701280	17.19	633202	19.74
ZZZZZZ	251252	5.83	947311	7.17	482552	9.67	783972	12.21	682158	17.19	607960	19.74
ZZZZZZ	258382	5.83	996174	7.17	494269	9.67	807884	12.21	701949	17.19	628283	19.74
ZZZZZZ	266583	5.83	1043941	7.18	531365	9.68	888782	12.23	788659	17.21	731119	19.75
ZZZZZZ	247082	5.83	917076	7.17	465023	9.67	767257	12.21	675145	17.19	631847	19.74
ZZZZZZ	264943	5.83	981407	7.17	487666	9.67	809096	12.21	702523	17.19	632100	19.74
ZZZZZZ	258274	5.83	965175	7.17	484318	9.67	791603	12.21	687327	17.19	622567	19.74
ZZZZZZ	232860	5.83	873207	7.17	447155	9.67	747819	12.21	653918	17.19	601004	19.74
ZZZZZZ	244343	5.83	922740	7.17	460954	9.67	758191	12.22	660731	17.19	579604	19.74
ZZZZZZ	246163	5.83	926909	7.17	462415	9.67	763454	12.21	656129	17.19	588324	19.74
ZZZZZZ	234573	5.83	891727	7.17	455255	9.67	745866	12.21	669674	17.19	596765	19.74

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.1

6

# Semivolatile Internal Standard Area Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSS888-CC884	Injection Date:	02/02/11
Lab File ID:	S21213.D	Injection Time:	12:54
Instrument ID:	GCMSS	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	163195	5.72	636245	7.07	303706	9.25	456723	11.44	428438	15.79	414759	18.02
Upper Limit <sup>a</sup>	326390	6.22	1272490	7.57	607412	9.75	913446	11.94	856876	16.29	829518	18.52
Lower Limit <sup>b</sup>	81598	5.22	318123	6.57	151853	8.75	228362	10.94	214219	15.29	207380	17.52

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	153876	5.72	644200	7.07	311817	9.25	478355	11.43	432471	15.78	430786	18.02
ZZZZZZ	188231	5.72	756203	7.07	372070	9.25	547151	11.43	468631	15.79	448103	18.02
ZZZZZZ	180844	5.72	744597	7.07	363502	9.25	554158	11.43	492731	15.79	481183	18.02
ZZZZZZ	133383	5.72	556129	7.07	267158	9.25	412175	11.43	367456	15.78	359904	18.02
M97346-1	196045	5.72	805982	7.07	391757	9.25	581409	11.43	491353	15.79	471756	18.02
M97346-2	187772	5.72	778262	7.07	373597	9.25	562799	11.43	507506	15.79	488668	18.02
M97346-3	197713	5.72	822333	7.07	397650	9.25	609042	11.43	538695	15.79	522884	18.02
ZZZZZZ	186149	5.72	752311	7.07	368481	9.25	561793	11.43	508037	15.79	496618	18.02
ZZZZZZ	194109	5.72	798381	7.07	394050	9.25	590743	11.43	529269	15.78	507312	18.02
OP23982-MS	173864	5.72	665027	7.07	319891	9.25	478058	11.44	428244	15.79	429183	18.02
OP23982-MSD	174057	5.72	677142	7.07	323062	9.25	487152	11.43	441664	15.79	437928	18.02
ZZZZZZ	172579	5.72	702657	7.07	341221	9.25	531801	11.43	462993	15.78	468300	18.02
M97427-2	171997	5.72	701838	7.07	343974	9.25	521496	11.43	464968	15.78	458609	18.02
ZZZZZZ	178896	5.72	714774	7.07	351291	9.25	547595	11.43	461989	15.78	464311	18.02
ZZZZZZ	181307	5.72	744551	7.07	356081	9.25	547214	11.43	487837	15.78	480694	18.02
ZZZZZZ	185150	5.72	769476	7.06	368321	9.25	552772	11.43	509251	15.78	488099	18.01
OP23963-MB	223635	5.72	904117	7.06	444024	9.25	667369	11.43	570705	15.78	517933	18.01
OP23963-BS	186914	5.72	726279	7.07	342642	9.25	512609	11.43	449976	15.78	399841	18.02
OP23963-MS	183005	5.72	707658	7.06	332292	9.25	481805	11.43	405146	15.78	365992	18.01
OP23963-MSD	207483	5.72	810349	7.07	400003	9.25	602490	11.43	496412	15.78	458168	18.02
M97350-10	202524	5.72	844111	7.06	400402	9.25	594470	11.43	502754	15.78	475366	18.01

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.2  
6

# Semivolatile Surrogate Recovery Summary

Job Number: M97346  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8270C	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M97346-1	S21218.D	39.0	24.0	88.0	71.0	73.0	76.0
M97346-2	S21219.D	38.0	24.0	90.0	73.0	74.0	78.0
M97346-3	S21220.D	39.0	24.0	82.0	75.0	75.0	73.0
OP23942-BS	I70222.D	50.0	32.0	78.0	83.0	81.0	85.0
OP23942-MB	I70221.D	43.0	26.0	65.0	74.0	73.0	82.0
OP23942-MS	I70223.D	49.0	31.0	78.0	84.0	82.0	86.0
OP23942-MSD	I70224.D	49.0	31.0	76.0	80.0	78.0	85.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

6.5.1  
**6**

# Roxana Groundwater Quarterly – 1st Quarter 2011

Laboratory SDG: M97347

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 2/23/2011

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-ROX-011911	MW6A-ROX-011911
MW6B-ROX-011911	MW6B-ROX-011911DUP
MW6A-ROX-011911EB	MW6C-ROX-012011EB

## 1.0 Data Package Completeness

*Were all items delivered as specified in the QAPP and COC as appropriate?*

Yes

## 2.0 Laboratory Case Narrative \ Cooler Receipt Form

*Were problems noted in the laboratory case narrative or cooler receipt form?*

Yes, the laboratory case narrative indicated VOC MS/MSD recoveries were outside evaluation criteria. VOC LCS/LCSD recoveries were outside evaluation criteria. SVOC LCS/LCSD recoveries and LCS/LCSD RPDs were outside evaluation criteria. Additionally, diethyl phthalate was detected in the method blank. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at 1.1°C which was outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required. Additionally, the cooler receipt form erroneously indicated N/A for the quality control/preservation questions, trip blank present in cooler and trip blank listed on the COC. A trip blank was included in the cooler and it was listed on the COC.

## 3.0 Holding Times

*Were samples extracted/analyzed within applicable limits?*

Yes

#### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes

Blank ID	Parameter	Analyte	Concentration/Amount
OP23942-MB	SVOCs	Diethyl phthalate	1.8 µg/L
MW6A-ROX-011911EB	SVOCs	Diethyl phthalate	0.67 µg/L
MW6C-ROX-012011EB	SVOCs	Diethyl phthalate	0.99 µg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW6A-ROX-011911	SVOCs	Diethyl phthalate	-	<b>U</b>
MW6B-ROX-011911	SVOCs	Diethyl phthalate	-	<b>U</b>
MW6B-ROX-011911DUP	SVOCs	Diethyl phthalate	-	<b>U</b>

#### 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
MSN1853-BS/BSD	VOCs	Acetone	91/58	44	70-130/25
MSN1853-BS/BSD	VOCs	2-Butanone	106/35	35	70-130/25
MSN1853-BS/BSD	VOCs	Chloroethane	68/62	9	70-130/25
MSN1853-BS/BSD	VOCs	Tetrachloroethene	135/130	4	70-130/25
MSN1853-BS/BSD	VOCs	Vinyl acetate	48/48	1	70-130/25
MSE2170-BS/BSD	VOCs	Dichlorodifluoromethane	129/131	2	70-130/25
MSE2170-BS/BSD	VOCs	Isopropylbenzene	126/131	4	70-130/25
MSE2170-BS/BSD	VOCs	Vinyl Acetate	65/69	5	70-130/25
OP239420BS	SVOCs	Benzoic Acid	18	NA	30-130

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Field ID	Parameter	Analyte	Qualification
MW6A-ROX-011911	VOCs	Chloroethane	<b>UJ</b>
MW6A-ROX-011911	VOCs	Vinyl Acetate	<b>UJ</b>
MW6A-ROX-011911	SVOCs	Benzoic Acid	<b>J</b>

Field ID	Parameter	Analyte	Qualification
MW6B-ROX-011911	VOCs	Vinyl Acetate	UJ
MW6B-ROX-011911	SVOCs	Benzoic Acid	UJ
MW6B-ROX-011911DUP	VOCs	Vinyl Acetate	UJ
MW6B-ROX-011911DUP	SVOCs	Benzoic Acid	UJ

## 6.0 Surrogate Recoveries

*Were surrogate recoveries within evaluation criteria?*

Yes

## 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

*Were MS/MSD samples analyzed as part of this SDG?*

Yes. Sample MW6B-ROX-011911 was spiked and analyzed for VOCs.

*Were MS/MSD recoveries within evaluation criteria?*

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/RPD Criteria
MW6B-ROX-011911	VOCs	Dichlorodifluoromethane	139/140	1	70-130/30
MW6B-ROX-011911	VOCs	Hexachlorobutadiene	124/134	7	70-130/30
MW6B-ROX-011911	VOCs	Isopropylbenzene	126/134	6	70-130/30
MW6B-ROX-011911	VOCs	Vinyl Acetate	60/64	7	70-130/30

Analytical results reported as non-detect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone and dichlorodifluoromethane, isopropylbenzene, and vinyl acetate were previously qualified due to LCS recoveries outside evaluation criteria. No further qualification of data was required.

## 8.0 Internal Standard (IS) Recoveries

*Were internal standard area recoveries within evaluation criteria?*

Yes

## 9.0 Laboratory Duplicate Results

*Were laboratory duplicate samples collected as part of this SDG?*

No



**10.0 Field Duplicate Results**

*Were field duplicate samples collected as part of this SDG?*

Yes

Field ID	Field Duplicate ID
MW6B-ROX-011911	MW6B-ROX-011911DUP

*Were field duplicates within evaluation criteria?*

Yes

**11.0 Sample Dilutions**

*For samples that were diluted and nondetect, were undiluted results also reported?*

Not applicable; samples analyzed did not require a dilution.

**12.0 Additional Qualifications**

*Were additional qualifications applied?*

Yes, professional judgment was used to qualify the common laboratory contaminant acetone reported at concentrations greater than two times (2X) the reporting limit (RL), since acetone is not representative of site conditions.

Sample ID	Analyte	New RL	Qualification	Comment
MW6A-ROX-011911	Acetone	13.5	U	Professional Judgment



03/08/11

Technical Report for

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Shell Oil

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

SAP#340061

Accutest Job Number: M97347

Sampling Dates: 01/19/11 - 01/20/11

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Report to:

URS Corporation

Elizabeth\_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

Total number of pages in report: 62

Reviewed  
on  
3/8/2011



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Reza Fand*  
Reza Fand  
Lab Director

Client Service contact: Kristen Blanchard 508-481-6200

Certifications: MA (M-MA136, SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) ISO 17025:2005 (L2235)  
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Test results relate only to samples analyzed.

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### Sample Summary

Shell Oil

Job No: M97347

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
M97347-1	01/19/11	00:00	01/22/11	AQ	Trip Blank Water	TB-ROX-011911
M97347-2	01/19/11	11:45	01/22/11	AQ	Ground Water	MW6A-ROX-011911
M97347-3	01/19/11	14:15	01/22/11	AQ	Ground Water	MW6B-ROX-011911
M97347-4	01/19/11	14:15	01/22/11	AQ	Ground Water	MW6B-ROX-011911DUP
M97347-5	01/19/11	08:05	01/22/11	AQ	Equipment Blank	MW6A-ROX-011911EB
M97347-6	01/20/11	09:00	01/22/11	AQ	Equipment Blank	MW6C-ROX-012011EB

## SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil

Job No M97347

Site: URSMOSTL-97216640 170 East Rand Avenue Hartford, IL

Report Date 2/7/2011 10:56:22 AM

5 Sample(s), 1 Trip Blank were collected on between 01/19/2011 and 01/20/2011 and were received at Accutest on 01/22/2011 properly preserved, at 1.1 Deg. C and intact. These Samples received an Accutest job number of M97347. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

Matrix	AQ	Batch ID:
		MSE2170

- \* All samples were analyzed within the recommended method holding time.
- \* Sample(s) M97347-3MS, M97347-3MSD were used as the QC samples indicated.
- \* All method blanks for this batch meet method specific criteria.
- \* Blank Spike Recovery(s) for Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- \* Matrix Spike Recovery(s) for Dichlorodifluoromethane, Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- \* Matrix Spike Duplicate Recovery(s) for Dichlorodifluoromethane, Hexachlorobutadiene, Isopropylbenzene, Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- \* BSD Recovery(s) for Dichlorodifluoromethane, Isopropylbenzene, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.

Matrix	AQ	Batch ID:
		MSN1853

- \* All samples were analyzed within the recommended method holding time.
- \* Sample(s) M97323-5MS, M97323-5MSD were used as the QC samples indicated.
- \* All method blanks for this batch meet method specific criteria.
- \* Blank Spike Recovery(s) for Chloroethane, Tetrachloroethene, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- \* MS/MSD Recovery(s) for Ethylbenzene is outside control limits. Outside control limits due to high level in sample relative to spike amount.
- \* Matrix Spike Duplicate Recovery(s) for 2-Butanone (MEK), Acetone, Chloroethane, Styrene, Tetrachloroethene, Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- \* RPD of MSN1853-BSD for 2-Butanone (MEK): Outside control limits. Individual spike recoveries within acceptance limits.
- \* Matrix Spike Recovery(s) for 2-Butanone (MEK), Acetone, Styrene, Tetrachloroethene, Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- \* RPD of MSN1853-BSD for Acetone is outside control limits. Blank Spike meets program technical requirements.
- \* BSD Recovery(s) for Acetone, Chloroethane, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.

## Extractables by GCMS By Method SW846 8270C

Matrix AQ

Batch ID: OP23942

- ⊗ All samples were extracted within the recommended method holding time.
- ⊗ All samples were analyzed within the recommended method holding time.
- ⊗ All method blanks for this batch meet method specific criteria.
- ⊗ Sample(s) M97378-IMS, M97378-1MSD were used as the QC samples indicated.
- ⊗ Blank Spike Recovery(s) for Benzoic Acid are outside control limits. Blank Spike meets program technical requirements.
- ⊗ Matrix Spike Recovery(s) for 4-Chloroaniline, Benzoic Acid are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- ⊗ Matrix Spike Duplicate Recovery(s) for Benzoic Acid are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- ⊗ Sample(s) M97347-2 through M97347-6 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M97347).

## Extractables by GCMS By Method SW846 8270C

Matrix AQ

Batch ID: OP23942

2

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M97378-1MS, M97378-1MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for Benzoic Acid are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 4-Chloroaniline, Benzoic Acid are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Benzoic Acid are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Sample(s) M97347-2 through M97347-6 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M97347).

**Sample Results**

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**Report of Analysis**

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## Report of Analysis

3.1  
3

Client Sample ID: TB-ROX-011911	Date Sampled: 01/19/11
Lab Sample ID: M97347-1	Date Received: 01/22/11
Matrix: AQ - Trip Blank Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N49101.D	1	01/27/11	JP	n/a	n/a	MSN1853
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

**VOA 8260 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.1  
3

Client Sample ID:	TB-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-1	Date Received:	01/22/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	91%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	93%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.2  
3

Client Sample ID:	MW6A-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	N49102.D	1	01/27/11	JP	n/a	n/a	MSN1853
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	<del>13.5</del> <sup>13.5</sup> ND 5.0	5.0	4.6	ug/l	"u"
71-43-2	Benzene	11.3	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	"u"
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	"u"
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6A-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	18.1	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"uJ"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	88%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis



Client Sample ID:	MW6A-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-2	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	I70233.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	4.4	10	0.77	ug/l	"J"
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3.2  
3

Client Sample ID: MW6A-ROX-011911	Date Sampled: 01/19/11
Lab Sample ID: M97347-2	Date Received: 01/22/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

**ABN PPL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	0.81	5.0	0.34	ug/l	J
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	1.00-GND	5.0	0.61	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	37%		15-110%
4165-62-2	Phenol-d5	23%		15-110%
118-79-6	2,4,6-Tribromophenol	69%		15-110%
4165-60-0	Nitrobenzene-d5	68%		30-130%
321-60-8	2-Fluorobiphenyl	70%		30-130%
1718-51-0	Terphenyl-d14	75%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.3  
3

Client Sample ID:	MW6B-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	E51401.D	1	01/31/11	TD	n/a	n/a	MSE2170

Run #1	Purge Volume
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	8.2	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

33  
3

Client Sample ID: MW6B-ROX-011911	Date Sampled: 01/19/11
Lab Sample ID: M97347-3	Date Received: 01/22/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

**VOA 8260 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.6	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"u"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	114%		70-130%
2037-26-5	Toluene-D8	118%		70-130%
460-00-4	4-Bromofluorobenzene	112%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW6B-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	I70234.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	u u u
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6B-ROX-011911	Date Sampled:	01/19/11
Lab Sample ID:	M97347-3	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	<del>0.870.0ND</del>	5.0	0.61	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		15-110%
4165-62-2	Phenol-d5	24%		15-110%
118-79-6	2,4,6-Tribromophenol	73%		15-110%
4165-60-0	Nitrobenzene-d5	72%		30-130%
321-60-8	2-Fluorobiphenyl	75%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6B-ROX-011911DUP	Date Sampled:	01/19/11
Lab Sample ID:	M97347-4	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51404.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	8.2	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.4  
3

Client Sample ID:	MW6B-ROX-011911DUP	Date Sampled:	01/19/11
Lab Sample ID:	M97347-4	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	1.4	5.0	0.56	ug/l	J
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.6	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	1.6	5.0	1.0	ug/l	J
120-82-1	1,2,4-Trichlorobenzene	1.1	5.0	0.57	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	uJ
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	111%		70-130%
2037-26-5	Toluene-D8	115%		70-130%
460-00-4	4-Bromofluorobenzene	110%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.4  
3

Client Sample ID:	MW6B-ROX-011911DUP	Date Sampled:	01/19/11
Lab Sample ID:	M97347-4	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C	Project: URMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21215.D	1	02/02/11	PR	01/25/11	OP23942	MSS888

Run #1	Initial Volume	Final Volume
Run #2	980 ml	1.0 ml

**ABN PPL List**

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.79	ug/l	uJ
95-57-8	2-Chlorophenol	ND	5.1	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.58	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.49	ug/l	
	3&4-Methylphenol	ND	10	0.64	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.67	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.1	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.1	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.1	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.1	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.1	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.1	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.1	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.1	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.1	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	
218-01-9	Chrysene	ND	5.1	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis



Client Sample ID:	MW6B-ROX-011911DUP	Date Sampled:	01/19/11
Lab Sample ID:	M97347-4	Date Received:	01/22/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.62	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.1	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.34	ug/l	
84-66-2	Diethyl phthalate	<del>ND</del> <sup>1.0-0ND</sup>	5.1	0.62	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.1	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.50	ug/l	
206-44-0	Fluoranthene	ND	5.1	0.22	ug/l	
86-73-7	Fluorene	ND	5.1	0.30	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.1	0.44	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.1	0.29	ug/l	
78-59-1	Isophorone	ND	5.1	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.1	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.1	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.62	ug/l	
85-01-8	Phenanthrene	ND	5.1	0.26	ug/l	
129-00-0	Pyrene	ND	5.1	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		15-110%
4165-62-2	Phenol-d5	23%		15-110%
118-79-6	2,4,6-Tribromophenol	87%		15-110%
4165-60-0	Nitrobenzene-d5	72%		30-130%
321-60-8	2-Fluorobiphenyl	74%		30-130%
1718-51-0	Terphenyl-d14	77%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.5  
3

<b>Client Sample ID:</b> MW6A-ROX-011911EB	
<b>Lab Sample ID:</b> M97347-5	<b>Date Sampled:</b> 01/19/11
<b>Matrix:</b> AQ - Equipment Blank	<b>Date Received:</b> 01/22/11
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51398.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis



Client Sample ID:	MW6A-ROX-011911EB	Date Sampled:	01/19/11
Lab Sample ID:	M97347-5	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	113%		70-130%
2037-26-5	Toluene-D8	116%		70-130%
460-00-4	4-Bromofluorobenzene	111%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW6A-ROX-011911EB	Date Sampled:	01/19/11
Lab Sample ID:	M97347-5	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21216.D	1	02/02/11	PR	01/25/11	OP23942	MSS888
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.78	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.69	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.58	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.70	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.64	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.1	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.1	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.1	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.1	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.1	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.1	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.1	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.1	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.1	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.1	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6A-ROX-011911EB	Date Sampled:	01/19/11
Lab Sample ID:	M97347-5	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.62	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.1	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.34	ug/l	
84-66-2	Diethyl phthalate	0.67	5.1	0.62	ug/l	JB
131-11-3	Dimethyl phthalate	ND	5.1	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.1	0.22	ug/l	
86-73-7	Fluorene	ND	5.1	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.1	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.1	0.29	ug/l	
78-59-1	Isophorone	ND	5.1	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.1	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.1	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.62	ug/l	
85-01-8	Phenanthrene	ND	5.1	0.26	ug/l	
129-00-0	Pyrene	ND	5.1	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		15-110%
4165-62-2	Phenol-d5	23%		15-110%
118-79-6	2,4,6-Tribromophenol	87%		15-110%
4165-60-0	Nitrobenzene-d5	78%		30-130%
321-60-8	2-Fluorobiphenyl	78%		30-130%
1718-51-0	Terphenyl-d14	85%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6C-ROX-012011EB	Date Sampled:	01/20/11
Lab Sample ID:	M97347-6	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51399.D	1	01/31/11	TD	n/a	n/a	MSE2170
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6C-ROX-012011EB	Date Sampled:	01/20/11
Lab Sample ID:	M97347-6	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	110%		70-130%
2037-26-5	Toluene-D8	116%		70-130%
460-00-4	4-Bromofluorobenzene	109%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis



Client Sample ID:	MW6C-ROX-012011EB	Date Sampled:	01/20/11
Lab Sample ID:	M97347-6	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21217.D	1	02/02/11	PR	01/25/11	OP23942	MSS888
Run #2							

Run #	Initial Volume	Final Volume
Run #1	990 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.78	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.69	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.58	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.70	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.64	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.1	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.1	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.1	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.1	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.1	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.1	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.1	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.1	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.1	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.1	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW6C-ROX-012011EB	Date Sampled:	01/20/11
Lab Sample ID:	M97347-6	Date Received:	01/22/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.62	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.1	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.34	ug/l	
84-66-2	Diethyl phthalate	0.99	5.1	0.62	ug/l	JB
131-11-3	Dimethyl phthalate	ND	5.1	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.1	0.22	ug/l	
86-73-7	Fluorene	ND	5.1	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.1	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.1	0.29	ug/l	
78-59-1	Isophorone	ND	5.1	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.1	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.1	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.62	ug/l	
85-01-8	Phenanthrene	ND	5.1	0.26	ug/l	
129-00-0	Pyrene	ND	5.1	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		15-110%
4165-62-2	Phenol-d5	22%		15-110%
118-79-6	2,4,6-Tribromophenol	84%		15-110%
4165-60-0	Nitrobenzene-d5	75%		30-130%
321-60-8	2-Fluorobiphenyl	77%		30-130%
1718-51-0	Terphenyl-d14	84%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Misc. Forms

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## Custody Documents and Other Forms

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Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody

LAB (LOCATION)

Shell Oil Products Chain Of Custody Record **M97347**

WPCO  
 CASCO  
 OTHER: LABORATORY  
 S/L

Please Check Appropriate Box:

ENV. SERVICES     MOTIVA RETAIL     SHELL RETAIL  
 MOTIVA SEARCH     CONSULTANT     LUBES  
 SHELL PIPELINE     OTHER

Print Bill To Contact Name: WENROY PENNINGTON

INCIDENT # (ENV SERVICES) 97210649     CHECK IF NO INCIDENT # APPLIES

DATE 1/20/11

WENROY PENNINGTON    PID #    SAP #    PAGE 1

LAB VENDOR #

CAUSE: LABORATORY  
 OTHER: LABORATORY  
 S/L

Lab Vendor #

1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110

WENROY PENNINGTON

170 EAST RAND AVENUE - HARTFORD

LAB USE ONLY

DELIVERABLES:  LEVEL 1     LEVEL 2     LEVEL 3     LEVEL 4     OTHER (SPECIFY) EDD

TEMPERATURE ON RECEIPT °F    Cooler #1    Cooler #2    Cooler #3

SPECIAL INSTRUCTIONS OR NOTES:

QUOTE # PEK122010-14

REQUESTED ANALYSIS

FIELD NOTES:

TEMPERATURE ON RECEIPT °C

CONTAINER PID READINGS or Laboratory Notes

LAB USE ONLY	Field Sample Identification	SAMPLING		DATE	TIME	LAB TIME	PRESERVATIVE					VOL. OR CONT.	PID (ppm)
		DATE	TIME				ICE	NO. 2	NO. 3	NO. 4	OTHER		
	1 TB-ROX-01911 ✓			1/19/11	11:45	2						2	✓
	2 MWGA-ROX-01911 ✓			1/19/11	11:45	3			2			5	✓
	3 MWGB-ROX-01911 ✓			1/19/11	11:45	3			2			5	✓
	4 MWGB-ROX-01911 ✓			1/19/11	11:45	3			2			5	✓
	5 MWGA-ROX-01911 ✓			1/19/11	11:45	3			2			5	✓
	6 MWGB-ROX-01911 ✓			1/19/11	11:45	3			2			5	✓

Prepared by: [Signature]    Received by: [Signature]    Date: 1/20/11    Time: 1200  
 Prepared by: FED    Received by: [Signature]    Date: 1-22-11    Time: 1020  
 Prepared by: \_\_\_\_\_    Received by: \_\_\_\_\_    Date: \_\_\_\_\_    Time: \_\_\_\_\_

Loc: 17A, 5G3

1.1

4.3  
4





# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: M97347 Client: URS Immediate Client Services Action Required: No  
 Date / Time Received: 1/22/2011 Delivery Method: \_\_\_\_\_ Client Service Action Required at Login: No  
 Project: \_\_\_\_\_ No. Coolers: 1 Airbill #s: \_\_\_\_\_

**Cooler Security** Y or N Y or N

- |                          |                                     |                          |                       |                                     |                          |
|--------------------------|-------------------------------------|--------------------------|-----------------------|-------------------------------------|--------------------------|
| 1. Custody Seals Present | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 3. COC Present        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Custody Seals Intact  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Cooler Temperature** Y or N

- |                              |                                     |                          |
|------------------------------|-------------------------------------|--------------------------|
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Cooler temp verification: | <u>Infrared gun</u>                 |                          |
| 3. Cooler media:             | <u>Ice (bag)</u>                    |                          |

**Quality Control Preservation** Y or N N/A

- |                                 |                                     |                          |                                     |
|---------------------------------|-------------------------------------|--------------------------|-------------------------------------|
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> | <input type="checkbox"/> |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

**Sample Integrity - Documentation** Y or N

- |  |                                     |                          |
|--|-------------------------------------|--------------------------|
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

**Sample Integrity - Condition** Y or N

- |                                  |                                     |                          |
|----------------------------------|-------------------------------------|--------------------------|
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Condition of sample:          | <u>Intact</u>                       |                          |

**Sample Integrity - Instructions** Y or N N/A

- |  |                                     |                                     |                                     |
|--|-------------------------------------|-------------------------------------|-------------------------------------|
| 1. Analysis requested is clear:            | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests: | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:   | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:         | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:           | <input type="checkbox"/>            | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

Accutest Laboratories  
V:508.481.6200

495 Technology Center West, Bldg One  
F: 508.481.7753

Marlborough, MA  
www.accutest.com

4.1  
4

M97347: Chain of Custody  
Page 2 of 2

### Internal Sample Tracking Chronicle

Shell Oil

Job No: M97347

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

4.2  
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M97347-1 Collected: 19-JAN-11 00:00 By: TB-ROX-011911 Received: 22-JAN-11 By: BC						
M97347-1	SW846 8260B	27-JAN-11 19:12	JP			V8260STD
M97347-2 Collected: 19-JAN-11 11:45 By: MW6A-ROX-011911 Received: 22-JAN-11 By: BC						
M97347-2	SW846 8260B	27-JAN-11 19:40	JP			V8260STD
M97347-2	SW846 8270C	02-FEB-11 21:29	AA	25-JAN-11	BJ	AB8270PPL
M97347-3 Collected: 19-JAN-11 14:15 By: MW6B-ROX-011911 Received: 22-JAN-11 By: BC						
M97347-3	SW846 8260B	31-JAN-11 15:19	TD			V8260STD
M97347-3	SW846 8270C	02-FEB-11 22:00	AA	25-JAN-11	BJ	AB8270PPL
M97347-4 Collected: 19-JAN-11 14:15 By: MW6B-ROX-011911DUP Received: 22-JAN-11 By: BC						
M97347-4	SW846 8260B	31-JAN-11 16:40	TD			V8260STD
M97347-4	SW846 8270C	02-FEB-11 13:48	PR	25-JAN-11	BJ	AB8270PPL
M97347-5 Collected: 19-JAN-11 08:05 By: MW6A-ROX-011911EB Received: 22-JAN-11 By: BC						
M97347-5	SW846 8260B	31-JAN-11 13:52	TD			V8260STD
M97347-5	SW846 8270C	02-FEB-11 14:15	PR	25-JAN-11	BJ	AB8270PPL
M97347-6 Collected: 20-JAN-11 09:00 By: MW6C-ROX-012011EB Received: 22-JAN-11 By: BC						
M97347-6	SW846 8260B	31-JAN-11 14:21	TD			V8260STD
M97347-6	SW846 8270C	02-FEB-11 14:42	PR	25-JAN-11	BJ	AB8270PPL

# Accutest Internal Chain of Custody

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/22/11

4.3  
4

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97347-1.1	VOC Ref #5	Jugal Patel	01/27/11 14:35	Retrieve from Storage
M97347-1.1	Jugal Patel	GCMSEN	01/27/11 14:35	Load on Instrument
M97347-1.1	GCMSEN	Jugal Patel	01/28/11 10:23	Unload from Instrument
M97347-1.1	Jugal Patel	VOC Ref #5	01/28/11 10:23	Return to Storage
M97347-2.1	VOC Ref #5	Jugal Patel	01/27/11 14:35	Retrieve from Storage
M97347-2.1	Jugal Patel	GCMSEN	01/27/11 14:35	Load on Instrument
M97347-2.1	GCMSEN	Jugal Patel	01/28/11 10:23	Unload from Instrument
M97347-2.1	Jugal Patel	VOC Ref #5	01/28/11 10:23	Return to Storage
M97347-2.5	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97347-2.5	Michael Widuta		01/25/11 14:02	Depleted
M97347-3.2	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97347-3.2	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97347-3.2	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97347-3.2	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97347-3.3	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97347-3.3	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97347-3.3	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97347-3.3	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97347-3.5	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97347-3.5	Michael Widuta		01/25/11 14:02	Depleted
M97347-4.3	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97347-4.3	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97347-4.3	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97347-4.3	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97347-4.4	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97347-4.4	Michael Widuta		01/25/11 14:02	Depleted
M97347-5.1	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97347-5.1	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument
M97347-5.1	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97347-5.1	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97347-5.5	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97347-5.5	Michael Widuta		01/25/11 14:02	Depleted
M97347-6.3	VOC Ref #5	Tamis Dudo	01/31/11 12:45	Retrieve from Storage
M97347-6.3	Tamis Dudo	GCMSE	01/31/11 12:45	Load on Instrument

# Accutest Internal Chain of Custody

Job Number: M97347  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
Received: 01/22/11

4.3

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Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97347-6.3	GCMSE	Tamis Dudo	02/01/11 09:30	Unload from Instrument
M97347-6.3	Tamis Dudo	VOC Ref #5	02/02/11 15:51	Return to Storage
M97347-6.5	Walk In Ref #22	Michael Widuta	01/25/11 07:34	Retrieve from Storage
M97347-6.5	Michael Widuta		01/25/11 14:02	Depleted

## GC/MS Volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1853-MB	N49091.D	1	01/27/11	JP	n/a	n/a	MSN1853

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-1, M97347-2

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.1  
5

# Method Blank Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1853-MB	N49091.D	1	01/27/11	JP	n/a	n/a	MSN1853

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-1, M97347-2

CAS No.	Compound	Result	RL	MDL	Units	Q
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	90% 70-130%
2037-26-5	Toluene-D8	101% 70-130%
460-00-4	4-Bromofluorobenzene	94% 70-130%

5.1.1  
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## Method Blank Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-MB	E51394.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.2  
5



# Method Blank Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-MB	E51394.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	Result	RL	MDL	Units	Q
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Limits
1868-53-7	Dibromofluoromethane	112% 70-130%
2037-26-5	Toluene-D8	116% 70-130%
460-00-4	4-Bromofluorobenzene	110% 70-130%

5.1.2  
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# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1853-BS	N49088.D	1	01/27/11	JP	n/a	n/a	MSN1853
MSN1853-BSD	N49089.D	1	01/27/11	JP	n/a	n/a	MSN1853

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-1, M97347-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	45.4	91	29.1	58* a	44* a	70-130/25
71-43-2	Benzene	50	45.9	92	44.2	88	4	70-130/25
108-86-1	Bromobenzene	50	54.9	110	55.0	110	0	70-130/25
74-97-5	Bromochloromethane	50	51.8	104	49.7	99	4	70-130/25
75-27-4	Bromodichloromethane	50	49.0	98	47.7	95	3	70-130/25
75-25-2	Bromoform	50	57.6	115	56.6	113	2	70-130/25
74-83-9	Bromomethane	50	61.0	122	59.7	119	2	70-130/25
78-93-3	2-Butanone (MEK)	50	53.0	106	37.3	75	35* b	70-130/25
104-51-8	n-Butylbenzene	50	48.0	96	46.9	94	2	70-130/25
135-98-8	sec-Butylbenzene	50	50.7	101	49.5	99	2	70-130/25
98-06-6	tert-Butylbenzene	50	48.0	96	46.3	93	4	70-130/25
75-15-0	Carbon disulfide	50	44.5	89	42.7	85	4	70-130/25
56-23-5	Carbon tetrachloride	50	50.6	101	46.7	93	8	70-130/25
108-90-7	Chlorobenzene	50	58.4	117	58.0	116	1	70-130/25
75-00-3	Chloroethane	50	34.0	68* a	31.2	62* a	9	70-130/25
67-66-3	Chloroform	50	41.6	83	40.0	80	4	70-130/25
74-87-3	Chloromethane	50	43.4	87	41.5	83	4	70-130/25
95-49-8	o-Chlorotoluene	50	45.5	91	44.5	89	2	70-130/25
106-43-4	p-Chlorotoluene	50	48.2	96	47.3	95	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	43.2	86	41.7	83	4	70-130/25
124-48-1	Dibromochloromethane	50	62.9	126	61.5	123	2	70-130/25
95-50-1	1,2-Dichlorobenzene	50	52.1	104	51.9	104	0	70-130/25
541-73-1	1,3-Dichlorobenzene	50	53.5	107	53.0	106	1	70-130/25
106-46-7	1,4-Dichlorobenzene	50	56.0	112	54.9	110	2	70-130/25
75-71-8	Dichlorodifluoromethane	50	49.0	98	45.8	92	7	70-130/25
75-34-3	1,1-Dichloroethane	50	39.4	79	37.4	75	5	70-130/25
107-06-2	1,2-Dichloroethane	50	47.6	95	46.5	93	2	70-130/25
75-35-4	1,1-Dichloroethene	50	48.3	97	42.7	85	12	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	43.8	88	42.0	84	4	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	45.2	90	43.9	88	3	70-130/25
78-87-5	1,2-Dichloropropane	50	40.6	81	39.4	79	3	70-130/25
142-28-9	1,3-Dichloropropane	50	49.2	98	49.0	98	0	70-130/25
594-20-7	2,2-Dichloropropane	50	42.4	85	40.1	80	6	70-130/25
563-58-6	1,1-Dichloropropene	50	48.9	98	44.2	88	10	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	48.1	96	46.4	93	4	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	51.3	103	49.3	99	4	70-130/25

5.2.1  
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# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1853-BS	N49088.D	1	01/27/11	JP	n/a	n/a	MSN1853
MSN1853-BSD	N49089.D	1	01/27/11	JP	n/a	n/a	MSN1853

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-1, M97347-2

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	50	55.6	111	53.6	107	4	70-130/25
87-68-3	Hexachlorobutadiene	50	65.1	130	62.5	125	4	70-130/25
98-82-8	Isopropylbenzene	50	58.4	117	56.2	112	4	70-130/25
99-87-6	p-Isopropyltoluene	50	50.4	101	49.0	98	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	42.9	86	41.3	83	4	70-130/25
74-95-3	Methylene bromide	50	54.4	109	53.1	106	2	70-130/25
75-09-2	Methylene chloride	50	42.7	85	39.3	79	8	70-130/25
103-65-1	n-Propylbenzene	50	48.1	96	46.6	93	3	70-130/25
100-42-5	Styrene	50	62.6	125	61.8	124	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	60.8	122	59.2	118	3	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	44.8	90	44.1	88	2	70-130/25
127-18-4	Tetrachloroethene	50	67.5	135* a	65.0	130	4	70-130/25
108-88-3	Toluene	50	51.0	102	49.2	98	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	59.9	120	60.0	120	0	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	64.0	128	62.6	125	2	70-130/25
71-55-6	1,1,1-Trichloroethane	50	43.4	87	41.2	82	5	70-130/25
79-00-5	1,1,2-Trichloroethane	50	46.7	93	46.3	93	1	70-130/25
79-01-6	Trichloroethene	50	48.8	98	45.1	90	8	70-130/25
75-69-4	Trichlorofluoromethane	50	40.3	81	36.0	72	11	70-130/25
96-18-4	1,2,3-Trichloropropane	50	43.5	87	42.3	85	3	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	49.7	99	48.4	97	3	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	49.5	99	48.4	97	2	70-130/25
108-05-4	Vinyl Acetate	50	24.2	48* a	23.9	48* a	1	70-130/25
75-01-4	Vinyl chloride	50	42.6	85	41.0	82	4	70-130/25
	m,p-Xylene	100	119	119	116	116	3	70-130/25
95-47-6	o-Xylene	50	59.6	119	58.4	117	2	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	91%	92%	70-130%
2037-26-5	Toluene-D8	104%	104%	70-130%
460-00-4	4-Bromofluorobenzene	90%	91%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.  
 (b) Outside control limits. Individual spike recoveries within acceptance limits.

5.2.1  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-BS	E51391.D	1	01/31/11	TD	n/a	n/a	MSE2170
MSE2170-BSD	E51392.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	62.5	125	57.6	115	8	70-130/25
71-43-2	Benzene	50	54.7	109	55.9	112	2	70-130/25
108-86-1	Bromobenzene	50	52.4	105	54.8	110	4	70-130/25
74-97-5	Bromochloromethane	50	50.5	101	51.3	103	2	70-130/25
75-27-4	Bromodichloromethane	50	53.3	107	53.7	107	1	70-130/25
75-25-2	Bromoform	50	46.8	94	46.5	93	1	70-130/25
74-83-9	Bromomethane	50	49.1	98	48.8	98	1	70-130/25
78-93-3	2-Butanone (MEK)	50	51.3	103	49.4	99	4	70-130/25
104-51-8	n-Butylbenzene	50	58.3	117	60.0	120	3	70-130/25
135-98-8	sec-Butylbenzene	50	56.6	113	57.9	116	2	70-130/25
98-06-6	tert-Butylbenzene	50	57.9	116	59.8	120	3	70-130/25
75-15-0	Carbon disulfide	50	57.1	114	58.5	117	2	70-130/25
56-23-5	Carbon tetrachloride	50	55.6	111	56.5	113	2	70-130/25
108-90-7	Chlorobenzene	50	52.2	104	54.5	109	4	70-130/25
75-00-3	Chloroethane	50	51.0	102	52.5	105	3	70-130/25
67-66-3	Chloroform	50	52.9	106	54.3	109	3	70-130/25
74-87-3	Chloromethane	50	49.8	100	51.4	103	3	70-130/25
95-49-8	o-Chlorotoluene	50	55.5	111	57.8	116	4	70-130/25
106-43-4	p-Chlorotoluene	50	56.2	112	57.6	115	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	42.8	86	42.5	85	1	70-130/25
124-48-1	Dibromochloromethane	50	49.2	98	50.9	102	3	70-130/25
95-50-1	1,2-Dichlorobenzene	50	51.7	103	53.6	107	4	70-130/25
541-73-1	1,3-Dichlorobenzene	50	50.5	101	52.2	104	3	70-130/25
106-46-7	1,4-Dichlorobenzene	50	55.3	111	56.6	113	2	70-130/25
75-71-8	Dichlorodifluoromethane	50	64.5	129	65.5	131* a	2	70-130/25
75-34-3	1,1-Dichloroethane	50	53.2	106	55.3	111	4	70-130/25
107-06-2	1,2-Dichloroethane	50	49.5	99	50.4	101	2	70-130/25
75-35-4	1,1-Dichloroethene	50	52.7	105	54.0	108	2	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	47.5	95	47.9	96	1	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	50.5	101	52.3	105	4	70-130/25
78-87-5	1,2-Dichloropropane	50	51.2	102	51.6	103	1	70-130/25
142-28-9	1,3-Dichloropropane	50	47.3	95	47.6	95	1	70-130/25
594-20-7	2,2-Dichloropropane	50	58.3	117	59.6	119	2	70-130/25
563-58-6	1,1-Dichloropropene	50	53.8	108	55.3	111	3	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	53.8	108	55.2	110	3	70-130/25
10061-02-6	trans-1,3-Dichloropropene	50	55.5	111	58.2	116	5	70-130/25

5.2.2  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2170-BS	E51391.D	1	01/31/11	TD	n/a	n/a	MSE2170
MSE2170-BSD	E51392.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	50	53.5	107	55.3	111	3	70-130/25
87-68-3	Hexachlorobutadiene	50	60.8	122	63.7	127	5	70-130/25
98-82-8	Isopropylbenzene	50	62.9	126	65.7	131* a	4	70-130/25
99-87-6	p-Isopropyltoluene	50	58.3	117	59.7	119	2	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	41.1	82	42.0	84	2	70-130/25
74-95-3	Methylene bromide	50	50.1	100	50.6	101	1	70-130/25
75-09-2	Methylene chloride	50	50.4	101	51.9	104	3	70-130/25
103-65-1	n-Propylbenzene	50	54.7	109	56.5	113	3	70-130/25
100-42-5	Styrene	50	49.1	98	50.3	101	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	53.5	107	53.9	108	1	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	47.2	94	48.5	97	3	70-130/25
127-18-4	Tetrachloroethene	50	50.2	100	51.2	102	2	70-130/25
108-88-3	Toluene	50	50.6	101	51.7	103	2	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	43.3	87	46.2	92	6	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	49.1	98	51.7	103	5	70-130/25
71-55-6	1,1,1-Trichloroethane	50	52.8	106	53.6	107	2	70-130/25
79-00-5	1,1,2-Trichloroethane	50	48.9	98	50.9	102	4	70-130/25
79-01-6	Trichloroethene	50	54.3	109	55.2	110	2	70-130/25
75-69-4	Trichlorofluoromethane	50	55.2	110	55.6	111	1	70-130/25
96-18-4	1,2,3-Trichloropropane	50	44.3	89	46.2	92	4	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	54.6	109	56.6	113	4	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	55.0	110	56.4	113	3	70-130/25
108-05-4	Vinyl Acetate	50	32.6	65* a	34.4	69* a	5	70-130/25
75-01-4	Vinyl chloride	50	51.2	102	53.1	106	4	70-130/25
	m,p-Xylene	100	107	107	111	111	4	70-130/25
95-47-6	o-Xylene	50	48.8	98	49.4	99	1	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	109%	111%	70-130%
2037-26-5	Toluene-D8	115%	116%	70-130%
460-00-4	4-Bromofluorobenzene	112%	114%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

5.2.2  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97323-5MS	N49107.D	1	01/27/11	JP	n/a	n/a	MSN1853
M97323-5MSD	N49108.D	1	01/27/11	JP	n/a	n/a	MSN1853
M97323-5	N49106.D	1	01/27/11	JP	n/a	n/a	MSN1853

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-1, M97347-2

CAS No.	Compound	M97323-5 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	20.2	40* a	21.0	42* a	4	70-130/30	
71-43-2	Benzene	14.9	50	58.5	87	57.4	85	2	70-130/30	
108-86-1	Bromobenzene	ND	50	53.9	108	54.1	108	0	70-130/30	
74-97-5	Bromochloromethane	ND	50	49.7	99	47.9	96	4	70-130/30	
75-27-4	Bromodichloromethane	ND	50	45.4	91	44.3	89	2	70-130/30	
75-25-2	Bromoform	ND	50	56.1	112	57.2	114	2	70-130/30	
74-83-9	Bromomethane	ND	50	55.6	111	58.2	116	5	70-130/30	
78-93-3	2-Butanone (MEK)	ND	50	29.6	59* a	29.9	60* a	1	70-130/30	
104-51-8	n-Butylbenzene	ND	50	46.1	92	46.0	92	0	70-130/30	
135-98-8	sec-Butylbenzene	ND	50	49.6	99	49.7	99	0	70-130/30	
98-06-6	tert-Butylbenzene	ND	50	46.2	92	45.4	91	2	70-130/30	
75-15-0	Carbon disulfide	ND	50	45.7	91	44.5	89	3	70-130/30	
56-23-5	Carbon tetrachloride	ND	50	44.4	89	43.7	87	2	70-130/30	
108-90-7	Chlorobenzene	ND	50	60.2	120	60.1	120	0	70-130/30	
75-00-3	Chloroethane	ND	50	38.3	77	33.8	68* a	12	70-130/30	
67-66-3	Chloroform	ND	50	37.9	76	37.6	75	1	70-130/30	
74-87-3	Chloromethane	ND	50	40.0	80	38.2	76	5	70-130/30	
95-49-8	o-Chlorotoluene	ND	50	43.9	88	43.4	87	1	70-130/30	
106-43-4	p-Chlorotoluene	ND	50	46.8	94	45.6	91	3	70-130/30	
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	40.1	80	42.5	85	6	70-130/30	
124-48-1	Dibromochloromethane	ND	50	60.5	121	59.9	120	1	70-130/30	
95-50-1	1,2-Dichlorobenzene	ND	50	51.2	102	51.9	104	1	70-130/30	
541-73-1	1,3-Dichlorobenzene	ND	50	52.3	105	52.3	105	0	70-130/30	
106-46-7	1,4-Dichlorobenzene	ND	50	54.5	109	54.3	109	0	70-130/30	
75-71-8	Dichlorodifluoromethane	ND	50	46.4	93	43.4	87	7	70-130/30	
75-34-3	1,1-Dichloroethane	ND	50	37.5	75	36.7	73	2	70-130/30	
107-06-2	1,2-Dichloroethane	ND	50	43.0	86	41.1	82	5	70-130/30	
75-35-4	1,1-Dichloroethene	ND	50	48.6	97	47.4	95	3	70-130/30	
156-59-2	cis-1,2-Dichloroethene	ND	50	43.6	87	42.6	85	2	70-130/30	
156-60-5	trans-1,2-Dichloroethene	ND	50	45.4	91	44.6	89	2	70-130/30	
78-87-5	1,2-Dichloropropane	ND	50	40.6	81	39.1	78	4	70-130/30	
142-28-9	1,3-Dichloropropane	ND	50	49.9	100	49.3	99	1	70-130/30	
594-20-7	2,2-Dichloropropane	ND	50	36.6	73	35.5	71	3	70-130/30	
563-58-6	1,1-Dichloropropene	ND	50	46.8	94	45.4	91	3	70-130/30	
10061-01-5	cis-1,3-Dichloropropene	ND	50	44.0	88	44.2	88	0	70-130/30	
10061-02-6	trans-1,3-Dichloropropene	ND	50	45.6	91	45.6	91	0	70-130/30	

5.3.1

5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97323-5MS	N49107.D	1	01/27/11	JP	n/a	n/a	MSN1853
M97323-5MSD	N49108.D	1	01/27/11	JP	n/a	n/a	MSN1853
M97323-5	N49106.D	1	01/27/11	JP	n/a	n/a	MSN1853

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-1, M97347-2

CAS No.	Compound	M97323-5 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	188	50	208	40* b	203	30* b	2	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	61.2	122	64.4	129	5	70-130/30
98-82-8	Isopropylbenzene	25.8	50	76.3	101	75.0	98	2	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	49.4	99	48.6	97	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	120	50	165	90	163	86	1	70-130/30
74-95-3	Methylene bromide	ND	50	50.6	101	48.9	98	3	70-130/30
75-09-2	Methylene chloride	ND	50	41.9	84	41.2	82	2	70-130/30
103-65-1	n-Propylbenzene	6.6	50	51.9	91	51.0	89	2	70-130/30
100-42-5	Styrene	ND	50	66.0	132* a	65.5	131* a	1	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	60.5	121	59.7	119	1	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	42.2	84	42.9	86	2	70-130/30
127-18-4	Tetrachloroethene	ND	50	69.5	139* a	67.9	136* a	2	70-130/30
108-88-3	Toluene	5.0	50	54.8	100	53.8	98	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	59.7	119	62.4	125	4	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	63.2	126	65.0	130	3	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	40.5	81	39.2	78	3	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	45.5	91	45.8	92	1	70-130/30
79-01-6	Trichloroethene	ND	50	46.0	92	45.7	91	1	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	36.8	74	35.4	71	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	40.5	81	40.4	81	0	70-130/30
95-63-6	1,2,4-Trimethylbenzene	55.2	50	92.4	74	90.8	71	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	3.5	50	51.1	95	49.5	92	3	70-130/30
108-05-4	Vinyl Acetate	ND	50	23.7	47* a	24.4	49* a	3	70-130/30
75-01-4	Vinyl chloride	ND	50	43.8	88	42.4	85	3	70-130/30
	m,p-Xylene	23.1	100	142	119	139	116	2	70-130/30
95-47-6	o-Xylene	83.8	50	132	96	130	92	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97323-5	Limits
1868-53-7	Dibromofluoromethane	87%	87%	86%	70-130%
2037-26-5	Toluene-D8	101%	100%	102%	70-130%
460-00-4	4-Bromofluorobenzene	87%	87%	89%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

(b) Outside control limits due to high level in sample relative to spike amount.

5.3.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97347-3MS	E51402.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3MSD	E51403.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3	E51401.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	M97347-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	229	92	232	93	1	70-130/30
71-43-2	Benzene	8.2	250	282	110	288	112	2	70-130/30
108-86-1	Bromobenzene	ND	250	261	104	274	110	5	70-130/30
74-97-5	Bromochloromethane	ND	250	254	102	260	104	2	70-130/30
75-27-4	Bromodichloromethane	ND	250	243	97	252	101	4	70-130/30
75-25-2	Bromoform	ND	250	178	71	179	72	1	70-130/30
74-83-9	Bromomethane	ND	250	260	104	263	105	1	70-130/30
78-93-3	2-Butanone (MEK)	ND	250	244	98	200	80	20	70-130/30
104-51-8	n-Butylbenzene	ND	250	290	116	308	123	6	70-130/30
135-98-8	sec-Butylbenzene	ND	250	283	113	300	120	6	70-130/30
98-06-6	tert-Butylbenzene	ND	250	282	113	301	120	7	70-130/30
75-15-0	Carbon disulfide	ND	250	236	94	240	96	2	70-130/30
56-23-5	Carbon tetrachloride	ND	250	280	112	289	116	3	70-130/30
108-90-7	Chlorobenzene	ND	250	269	108	273	109	1	70-130/30
75-00-3	Chloroethane	ND	250	267	107	276	110	3	70-130/30
67-66-3	Chloroform	ND	250	274	110	276	110	1	70-130/30
74-87-3	Chloromethane	ND	250	278	111	284	114	2	70-130/30
95-49-8	o-Chlorotoluene	ND	250	275	110	291	116	6	70-130/30
106-43-4	p-Chlorotoluene	ND	250	279	112	293	117	5	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	195	78	204	82	5	70-130/30
124-48-1	Dibromochloromethane	ND	250	211	84	217	87	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	250	255	102	265	106	4	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	250	252	101	258	103	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	250	273	109	280	112	3	70-130/30
75-71-8	Dichlorodifluoromethane	ND	250	348	139* a	350	140* a	1	70-130/30
75-34-3	1,1-Dichloroethane	ND	250	278	111	287	115	3	70-130/30
107-06-2	1,2-Dichloroethane	ND	250	237	95	244	98	3	70-130/30
75-35-4	1,1-Dichloroethene	ND	250	273	109	282	113	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	250	240	96	248	99	3	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	250	260	104	268	107	3	70-130/30
78-87-5	1,2-Dichloropropane	ND	250	254	102	266	106	5	70-130/30
142-28-9	1,3-Dichloropropane	ND	250	230	92	242	97	5	70-130/30
594-20-7	2,2-Dichloropropane	ND	250	303	121	305	122	1	70-130/30
563-58-6	1,1-Dichloropropene	ND	250	277	111	282	113	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	250	244	98	252	101	3	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND	250	247	99	256	102	4	70-130/30

5.3.2  
5



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97347-3MS	E51402.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3MSD	E51403.D	5	01/31/11	TD	n/a	n/a	MSE2170
M97347-3	E51401.D	1	01/31/11	TD	n/a	n/a	MSE2170

The QC reported here applies to the following samples:

Method: SW846 8260B

M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	M97347-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
100-41-4	Ethylbenzene	ND	250	270	108	282	113	4	70-130/30
87-68-3	Hexachlorobutadiene	ND	250	311	124	334	134* a	7	70-130/30
98-82-8	Isopropylbenzene	ND	250	315	126	336	134* a	6	70-130/30
99-87-6	p-Isopropyltoluene	ND	250	290	116	307	123	6	70-130/30
1634-04-4	Methyl Tert Butyl Ether	1.6	250	200	79	209	83	4	70-130/30
74-95-3	Methylene bromide	ND	250	250	100	249	100	0	70-130/30
75-09-2	Methylene chloride	ND	250	256	102	265	106	3	70-130/30
103-65-1	n-Propylbenzene	ND	250	275	110	290	116	5	70-130/30
100-42-5	Styrene	ND	250	209	84	215	86	3	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	269	108	277	111	3	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	232	93	236	94	2	70-130/30
127-18-4	Tetrachloroethene	ND	250	256	102	264	106	3	70-130/30
108-88-3	Toluene	ND	250	251	100	254	102	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	250	216	86	232	93	7	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	250	238	95	260	104	9	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	250	279	112	282	113	1	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	250	248	99	243	97	2	70-130/30
79-01-6	Trichloroethene	ND	250	270	108	275	110	2	70-130/30
75-69-4	Trichlorofluoromethane	ND	250	293	117	304	122	4	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	250	204	82	218	87	7	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	250	254	102	272	109	7	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	250	261	104	279	112	7	70-130/30
108-05-4	Vinyl Acetate	ND	250	149	60* a	160	64* a	7	70-130/30
75-01-4	Vinyl chloride	ND	250	276	110	284	114	3	70-130/30
	m,p-Xylene	ND	500	538	108	556	111	3	70-130/30
95-47-6	o-Xylene	ND	250	243	97	250	100	3	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97347-3	Limits
1868-53-7	Dibromofluoromethane	108%	110%	114%	70-130%
2037-26-5	Toluene-D8	112%	113%	118%	70-130%
460-00-4	4-Bromofluorobenzene	108%	115%	112%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

5.3.2  
5

# Volatile Internal Standard Area Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSE2170-CC2152	Injection Date:	01/31/11
Lab File ID:	E51390.D	Injection Time:	10:10
Instrument ID:	GCMSE	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	258610	9.10	421768	9.98	186730	13.24	181279	15.80	45421	6.61
Upper Limit <sup>a</sup>	517220	9.60	843536	10.48	373460	13.74	362558	16.30	90842	7.11
Lower Limit <sup>b</sup>	129305	8.60	210884	9.48	93365	12.74	90640	15.30	22711	6.11

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSE2170-BS	260644	9.10	422955	9.97	189126	13.24	176962	15.80	43862	6.61
MSE2170-BSD	255699	9.10	415613	9.97	185442	13.24	172080	15.80	44740	6.60
MSE2170-MB	242359	9.09	389164	9.97	166698	13.24	158217	15.80	39770	6.61
ZZZZZZ	236819	9.10	380812	9.97	162514	13.25	153840	15.80	37004	6.61
ZZZZZZ	250666	9.10	399919	9.98	168270	13.24	160247	15.81	40885	6.61
ZZZZZZ	246889	9.10	397174	9.98	165727	13.24	161053	15.80	42108	6.60
M97347-5	236949	9.10	380012	9.98	162471	13.24	151386	15.81	33128	6.61
M97347-6	238982	9.10	383811	9.97	163262	13.24	156243	15.80	40223	6.61
ZZZZZZ	237548	9.10	376532	9.97	161884	13.25	151687	15.80	35730	6.62
M97347-3	233433	9.09	374476	9.98	157549	13.24	149198	15.80	37233	6.60
M97347-3MS	242688	9.10	398125	9.97	176314	13.24	170130	15.80	37199	6.61
M97347-3MSD	244229	9.09	400072	9.98	174295	13.24	163410	15.80	36875	6.60
M97347-4	237201	9.09	378277	9.97	157690	13.24	153787	15.80	36247	6.60
ZZZZZZ	241972	9.10	382213	9.98	164786	13.24	151740	15.80	36929	6.61
ZZZZZZ	233061	9.10	376272	9.97	158030	13.24	147882	15.80	35185	6.61
ZZZZZZ	237457	9.10	381939	9.97	162081	13.24	154036	15.80	34352	6.60
ZZZZZZ	225056	9.09	367319	9.97	153964	13.24	145320	15.80	34019	6.61
ZZZZZZ	220505	9.09	361291	9.98	153410	13.24	142387	15.80	35261	6.60
ZZZZZZ	222436	9.10	354027	9.97	150787	13.24	146005	15.80	31157	6.61
ZZZZZZ	223741	9.09	352296	9.98	156478	13.24	144588	15.80	36835	6.60
ZZZZZZ	220666	9.10	355602	9.98	151629	13.24	144221	15.80	35853	6.61
ZZZZZZ	223768	9.09	361745	9.97	153859	13.24	143640	15.80	32181	6.60
ZZZZZZ	215077	9.10	356557	9.97	153432	13.24	142576	15.80	32321	6.60

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.4.1  
5

# Volatile Internal Standard Area Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std: MSN1853-CC1823	Injection Date: 01/27/11
Lab File ID: N49087.D	Injection Time: 12:29
Instrument ID: GCMSN	Method: SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	167293	8.60	228544	9.46	124496	12.71	118765	15.27	60814	6.19
Upper Limit <sup>a</sup>	334586	9.10	457088	9.96	248992	13.21	237530	15.77	121628	6.69
Lower Limit <sup>b</sup>	83647	8.10	114272	8.96	62248	12.21	59383	14.77	30407	5.69

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSN1853-BS	171973	8.60	235759	9.46	129645	12.71	122920	15.27	65373	6.19
MSN1853-BSD	172901	8.60	238171	9.46	128716	12.71	121843	15.27	61507	6.19
MSN1853-MB	167568	8.61	230698	9.46	119475	12.71	106453	15.27	65796	6.19
ZZZZZZ	167656	8.61	227015	9.46	115712	12.71	104611	15.27	59183	6.19
ZZZZZZ	150220	8.61	203142	9.47	114651	12.71	102569	15.27	54835	6.19
ZZZZZZ	165488	8.60	226318	9.46	117240	12.71	113961	15.27	57167	6.19
ZZZZZZ	169643	8.61	231137	9.46	121461	12.71	118830	15.27	58986	6.19
ZZZZZZ	174500	8.60	238281	9.46	122847	12.71	119979	15.27	61898	6.19
ZZZZZZ	177827	8.60	242382	9.46	123658	12.71	124441	15.27	62003	6.19
ZZZZZZ	178478	8.60	245822	9.46	125782	12.71	123814	15.27	68820	6.19
ZZZZZZ	180740	8.60	247357	9.46	125170	12.71	116329	15.27	70138	6.19
M97347-1	173511	8.60	240361	9.46	122013	12.71	112928	15.27	64973	6.19
M97347-2	173123	8.60	238017	9.46	120131	12.71	111408	15.27	69741	6.19
ZZZZZZ	174180	8.60	236904	9.46	123066	12.71	124552	15.27	66478	6.19
ZZZZZZ	185310	8.61	250555	9.46	128644	12.71	123763	15.27	68471	6.19
ZZZZZZ	186798	8.60	255134	9.46	127624	12.71	121197	15.27	67310	6.19
M97323-5	187988	8.60	256688	9.46	129415	12.71	129707	15.27	65318	6.19
M97323-5MS	195056	8.60	268216	9.46	138949	12.71	139537	15.27	69942	6.19
M97323-5MSD	195750	8.60	267415	9.46	139495	12.71	139807	15.27	73926	6.19
ZZZZZZ	193474	8.61	262804	9.46	131558	12.71	131227	15.27	65654	6.19
ZZZZZZ	196003	8.60	262972	9.46	130182	12.71	121431	15.27	64874	6.19

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.4.2  
5

# Volatile Surrogate Recovery Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8260B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M97347-1	N49101.D	91.0	102.0	93.0
M97347-2	N49102.D	88.0	101.0	95.0
M97347-3	E51401.D	114.0	118.0	112.0
M97347-4	E51404.D	111.0	115.0	110.0
M97347-5	E51398.D	113.0	116.0	111.0
M97347-6	E51399.D	110.0	116.0	109.0
M97323-5MS	N49107.D	87.0	101.0	87.0
M97323-5MSD	N49108.D	87.0	100.0	87.0
M97347-3MS	E51402.D	108.0	112.0	108.0
M97347-3MSD	E51403.D	110.0	113.0	115.0
MSE2170-BS	E51391.D	109.0	115.0	112.0
MSE2170-BSD	E51392.D	111.0	116.0	114.0
MSE2170-MB	E51394.D	112.0	116.0	110.0
MSN1853-BS	N49088.D	91.0	104.0	90.0
MSN1853-BSD	N49089.D	92.0	104.0	91.0
MSN1853-MB	N49091.D	90.0	101.0	94.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

5.5.1  
**5**

## GC/MS Semi-volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

## Method Blank Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MB	I70221.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	

## Method Blank Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MB	I70221.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

6.1.1

6

CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	1.8	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits
367-12-4	2-Fluorophenol	43% 15-110%
4165-62-2	Phenol-d5	26% 15-110%
118-79-6	2,4,6-Tribromophenol	65% 15-110%
4165-60-0	Nitrobenzene-d5	74% 30-130%
321-60-8	2-Fluorobiphenyl	73% 30-130%
1718-51-0	Terphenyl-d14	82% 30-130%

# Blank Spike Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-BS	I70222.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

6.2.1  
**6**

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	18.3	18* a	30-130
95-57-8	2-Chlorophenol	100	78.4	78	30-130
59-50-7	4-Chloro-3-methyl phenol	100	84.5	85	30-130
120-83-2	2,4-Dichlorophenol	100	85.8	86	30-130
105-67-9	2,4-Dimethylphenol	100	76.4	76	30-130
51-28-5	2,4-Dinitrophenol	100	86.5	87	30-130
534-52-1	4,6-Dinitro-o-cresol	100	85.1	85	30-130
95-48-7	2-Methylphenol	100	72.7	73	30-130
	3&4-Methylphenol	200	133	67	30-130
88-75-5	2-Nitrophenol	100	85.5	86	30-130
100-02-7	4-Nitrophenol	100	46.5	47	30-130
87-86-5	Pentachlorophenol	100	78.1	78	30-130
108-95-2	Phenol	100	34.1	34	30-130
95-95-4	2,4,5-Trichlorophenol	100	85.1	85	30-130
88-06-2	2,4,6-Trichlorophenol	100	85.2	85	30-130
83-32-9	Acenaphthene	50	43.2	86	40-140
208-96-8	Acenaphthylene	50	35.3	71	40-140
62-53-3	Aniline	50	32.3	65	40-140
120-12-7	Anthracene	50	41.9	84	40-140
56-55-3	Benzo(a)anthracene	50	47.4	95	40-140
50-32-8	Benzo(a)pyrene	50	39.3	79	40-140
205-99-2	Benzo(b)fluoranthene	50	44.9	90	40-140
191-24-2	Benzo(g,h,i)perylene	50	35.4	71	40-140
207-08-9	Benzo(k)fluoranthene	50	45.6	91	40-140
101-55-3	4-Bromophenyl phenyl ether	50	42.3	85	40-140
85-68-7	Butyl benzyl phthalate	50	46.2	92	40-140
91-58-7	2-Chloronaphthalene	50	42.1	84	40-140
106-47-8	4-Chloroaniline	50	34.8	70	40-140
218-01-9	Chrysene	50	50.1	100	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	41.7	83	40-140
111-44-4	bis(2-Chloroethyl)ether	50	43.3	87	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	45.3	91	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	43.9	88	40-140
121-14-2	2,4-Dinitrotoluene	50	44.9	90	40-140
606-20-2	2,6-Dinitrotoluene	50	43.6	87	40-140
91-94-1	3,3'-Dichlorobenzidine	50	38.2	76	40-140



# Blank Spike Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-BS	I70222.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
53-70-3	Dibenzo(a,h)anthracene	50	37.7	75	40-140
132-64-9	Dibenzofuran	50	41.9	84	40-140
84-74-2	Di-n-butyl phthalate	50	45.7	91	40-140
117-84-0	Di-n-octyl phthalate	50	51.7	103	40-140
84-66-2	Diethyl phthalate	50	46.7	93	40-140
131-11-3	Dimethyl phthalate	50	44.7	89	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	48.1	96	40-140
206-44-0	Fluoranthene	50	46.0	92	40-140
86-73-7	Fluorene	50	44.3	89	40-140
118-74-1	Hexachlorobenzene	50	42.6	85	40-140
77-47-4	Hexachlorocyclopentadiene	50	30.2	60	40-140
67-72-1	Hexachloroethane	50	38.6	77	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	37.7	75	40-140
78-59-1	Isophorone	50	41.5	83	40-140
91-57-6	2-Methylnaphthalene	50	39.4	79	40-140
88-74-4	2-Nitroaniline	50	44.6	89	40-140
99-09-2	3-Nitroaniline	50	34.9	70	40-140
100-01-6	4-Nitroaniline	50	42.0	84	40-140
91-20-3	Naphthalene	50	42.4	85	40-140
98-95-3	Nitrobenzene	50	41.4	83	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	46.3	93	40-140
86-30-6	N-Nitrosodiphenylamine	50	43.0	86	40-140
85-01-8	Phenanthrene	50	43.1	86	40-140
129-00-0	Pyrene	50	43.8	88	40-140
110-86-1	Pyridine	50	26.1	52	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	50%	15-110%
4165-62-2	Phenol-d5	32%	15-110%
118-79-6	2,4,6-Tribromophenol	78%	15-110%
4165-60-0	Nitrobenzene-d5	83%	30-130%
321-60-8	2-Fluorobiphenyl	81%	30-130%
1718-51-0	Terphenyl-d14	85%	30-130%

6.2.1

6

## Blank Spike Summary

Page 3 of 3

Job Number: M97347

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-BS	I70222.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

(a) Outside control limits. Blank Spike meets program technical requirements.

6.2.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MS	I70223.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
OP23942-MSD	I70224.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
M97378-1	I70225.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	M97378-1 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	100	20.3	20* a	22.4	22* a	10	30-130/20
95-57-8	2-Chlorophenol	ND	100	79.9	80	76.7	77	4	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	100	88.6	89	84.6	85	5	30-130/20
120-83-2	2,4-Dichlorophenol	ND	100	87.5	88	84.5	85	3	30-130/20
105-67-9	2,4-Dimethylphenol	ND	100	69.4	69	68.8	69	1	30-130/20
51-28-5	2,4-Dinitrophenol	ND	100	88.8	89	89.1	89	0	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND	100	87.3	87	88.7	89	2	30-130/20
95-48-7	2-Methylphenol	ND	100	71.7	72	70.4	70	2	30-130/20
	3&4-Methylphenol	ND	200	134	67	129	65	4	30-130/20
88-75-5	2-Nitrophenol	ND	100	87.8	88	85.1	85	3	30-130/20
100-02-7	4-Nitrophenol	ND	100	45.4	45	45.2	45	0	30-130/20
87-86-5	Pentachlorophenol	ND	100	83.9	84	80.8	81	4	30-130/20
108-95-2	Phenol	ND	100	34.0	34	33.4	33	2	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	100	87.0	87	82.6	83	5	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	100	87.2	87	84.2	84	4	30-130/20
83-32-9	Acenaphthene	ND	50	43.5	87	41.1	82	6	40-140/20
208-96-8	Acenaphthylene	ND	50	36.2	72	34.9	70	4	40-140/20
62-53-3	Aniline	ND	50	24.7	49	27.8	56	12	40-140/20
120-12-7	Anthracene	ND	50	41.6	83	40.6	81	2	40-140/20
56-55-3	Benzo(a)anthracene	ND	50	48.5	97	46.8	94	4	40-140/20
50-32-8	Benzo(a)pyrene	ND	50	40.5	81	39.0	78	4	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	50	46.3	93	43.9	88	5	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	50	35.8	72	33.5	67	7	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	50	47.3	95	47.0	94	1	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	50	43.4	87	41.8	84	4	40-140/20
85-68-7	Butyl benzyl phthalate	ND	50	46.9	94	45.6	91	3	40-140/20
91-58-7	2-Chloronaphthalene	ND	50	43.0	86	41.3	83	4	40-140/20
106-47-8	4-Chloroaniline	ND	50	18.3	37* a	21.2	42	15	40-140/20
218-01-9	Chrysene	ND	50	51.4	103	48.5	97	6	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	50	43.1	86	41.6	83	4	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	50	44.8	90	41.7	83	7	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	50	46.0	92	41.6	83	10	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	50	43.7	87	41.1	82	6	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	50	44.9	90	43.9	88	2	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	50	44.3	89	43.3	87	2	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	50	29.1	58	28.9	58	1	40-140/20

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MS	I70223.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
OP23942-MSD	I70224.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
M97378-1	I70225.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

CAS No.	Compound	M97378-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	ND	50	38.2	76	36.1	72	6	40-140/20	
132-64-9	Dibenzofuran	ND	50	42.2	84	40.3	81	5	40-140/20	
84-74-2	Di-n-butyl phthalate	ND	50	45.8	92	44.8	90	2	40-140/20	
117-84-0	Di-n-octyl phthalate	ND	50	53.7	107	52.7	105	2	40-140/20	
84-66-2	Diethyl phthalate	1.6	50	46.8	90	45.2	87	3	40-140/20	
131-11-3	Dimethyl phthalate	ND	50	44.7	89	43.7	87	2	40-140/20	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	50	49.1	98	47.7	95	3	40-140/20	
206-44-0	Fluoranthene	ND	50	46.1	92	44.1	88	4	40-140/20	
86-73-7	Fluorene	ND	50	44.4	89	42.1	84	5	40-140/20	
118-74-1	Hexachlorobenzene	ND	50	43.7	87	41.6	83	5	40-140/20	
77-47-4	Hexachlorocyclopentadiene	ND	50	31.4	63	30.8	62	2	40-140/20	
67-72-1	Hexachloroethane	ND	50	39.5	79	37.4	75	5	40-140/20	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	50	38.4	77	36.6	73	5	40-140/20	
78-59-1	Isophorone	ND	50	43.0	86	41.3	83	4	40-140/20	
91-57-6	2-Methylnaphthalene	ND	50	41.0	82	38.3	77	7	40-140/20	
88-74-4	2-Nitroaniline	ND	50	45.3	91	44.0	88	3	40-140/20	
99-09-2	3-Nitroaniline	ND	50	21.9	44	24.6	49	12	40-140/20	
100-01-6	4-Nitroaniline	ND	50	38.6	77	38.8	78	1	40-140/20	
91-20-3	Naphthalene	ND	50	43.8	88	41.9	84	4	40-140/20	
98-95-3	Nitrobenzene	ND	50	42.0	84	40.8	82	3	40-140/20	
621-64-7	N-Nitroso-di-n-propylamine	ND	50	48.1	96	44.5	89	8	40-140/20	
86-30-6	N-Nitrosodiphenylamine	ND	50	44.3	89	42.5	85	4	40-140/20	
85-01-8	Phenanthrene	ND	50	43.6	87	42.4	85	3	40-140/20	
129-00-0	Pyrene	ND	50	44.4	89	43.0	86	3	40-140/20	
110-86-1	Pyridine	ND	50	24.9	50	28.2	56	12	40-140/20	

CAS No.	Surrogate Recoveries	MS	MSD	M97378-1	Limits
367-12-4	2-Fluorophenol	49%	49%	35%	15-110%
4165-62-2	Phenol-d5	31%	31%	21%	15-110%
118-79-6	2,4,6-Tribromophenol	78%	76%	59%	15-110%
4165-60-0	Nitrobenzene-d5	84%	80%	64%	30-130%
321-60-8	2-Fluorobiphenyl	82%	78%	65%	30-130%
1718-51-0	Terphenyl-d14	86%	85%	73%	30-130%

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97347

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23942-MS	I70223.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
OP23942-MSD	I70224.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472
M97378-1	I70225.D	1	02/02/11	AA	01/25/11	OP23942	MSI2472

The QC reported here applies to the following samples:

Method: SW846 8270C

M97347-2, M97347-3, M97347-4, M97347-5, M97347-6

6.3.1

6

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

# Semivolatle Internal Standard Area Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSI2472-CC2467	Injection Date:	02/02/11
Lab File ID:	I70217.D	Injection Time:	12:31
Instrument ID:	GCMSI	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	292933	5.83	1097131	7.18	550055	9.67	902740	12.22	810859	17.20	707204	19.75
Upper Limit <sup>a</sup>	585866	6.33	2194262	7.68	1100110	10.17	1805480	12.72	1621718	17.70	1414408	20.25
Lower Limit <sup>b</sup>	146467	5.33	548566	6.68	275028	9.17	451370	11.72	405430	16.70	353602	19.25

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	283222	5.83	1084662	7.17	544971	9.67	894222	12.21	748949	17.19	641120	19.74
ZZZZZZ	304905	5.83	1164586	7.17	591102	9.67	965005	12.22	818052	17.20	700266	19.74
OP23942-MB	273706	5.83	1040413	7.17	527168	9.67	860523	12.22	743118	17.19	658728	19.74
OP23942-BS	252157	5.83	957662	7.17	473238	9.67	775808	12.22	689687	17.20	627759	19.74
OP23942-MS	260122	5.83	989310	7.17	500497	9.67	814896	12.22	722322	17.20	642526	19.74
OP23942-MSD	299395	5.83	1118022	7.17	551394	9.67	881335	12.22	765990	17.20	661545	19.74
M97378-1	262832	5.83	990445	7.17	495978	9.67	810599	12.21	701280	17.19	633202	19.74
ZZZZZZ	251252	5.83	947311	7.17	482552	9.67	783972	12.21	682158	17.19	607960	19.74
ZZZZZZ	258382	5.83	996174	7.17	494269	9.67	807884	12.21	701949	17.19	628283	19.74
ZZZZZZ	266583	5.83	1043941	7.18	531365	9.68	888782	12.23	788659	17.21	731119	19.75
ZZZZZZ	247082	5.83	917076	7.17	465023	9.67	767257	12.21	675145	17.19	631847	19.74
ZZZZZZ	264943	5.83	981407	7.17	487666	9.67	809096	12.21	702523	17.19	632100	19.74
ZZZZZZ	258274	5.83	965175	7.17	484318	9.67	791603	12.21	687327	17.19	622567	19.74
ZZZZZZ	232860	5.83	873207	7.17	447155	9.67	747819	12.21	653918	17.19	601004	19.74
M97347-2	244343	5.83	922740	7.17	460954	9.67	758191	12.22	660731	17.19	579604	19.74
M97347-3	246163	5.83	926909	7.17	462415	9.67	763454	12.21	656129	17.19	588324	19.74
ZZZZZZ	234573	5.83	891727	7.17	455255	9.67	745866	12.21	669674	17.19	596765	19.74

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.1  
**6**

# Semivolatiles Internal Standard Area Summary

Job Number: M97347  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSS888-CC884	Injection Date:	02/02/11
Lab File ID:	S21213.D	Injection Time:	12:54
Instrument ID:	GCMSS	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	163195	5.72	636245	7.07	303706	9.25	456723	11.44	428438	15.79	414759	18.02
Upper Limit <sup>a</sup>	326390	6.22	1272490	7.57	607412	9.75	913446	11.94	856876	16.29	829518	18.52
Lower Limit <sup>b</sup>	81598	5.22	318123	6.57	151853	8.75	228362	10.94	214219	15.29	207380	17.52

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	153876	5.72	644200	7.07	311817	9.25	478355	11.43	432471	15.78	430786	18.02
M97347-4	188231	5.72	756203	7.07	372070	9.25	547151	11.43	468631	15.79	448103	18.02
M97347-5	180844	5.72	744597	7.07	363502	9.25	554158	11.43	492731	15.79	481183	18.02
M97347-6	133383	5.72	556129	7.07	267158	9.25	412175	11.43	367456	15.78	359904	18.02
ZZZZZZ	196045	5.72	805982	7.07	391757	9.25	581409	11.43	491353	15.79	471756	18.02
ZZZZZZ	187772	5.72	778262	7.07	373597	9.25	562799	11.43	507506	15.79	488668	18.02
ZZZZZZ	197713	5.72	822333	7.07	397650	9.25	609042	11.43	538695	15.79	522884	18.02
ZZZZZZ	186149	5.72	752311	7.07	368481	9.25	561793	11.43	508037	15.79	496618	18.02
ZZZZZZ	194109	5.72	798381	7.07	394050	9.25	590743	11.43	529269	15.78	507312	18.02
OP23982-MS	173864	5.72	665027	7.07	319891	9.25	478058	11.44	428244	15.79	429183	18.02
OP23982-MSD	174057	5.72	677142	7.07	323062	9.25	487152	11.43	441664	15.79	437928	18.02
ZZZZZZ	172579	5.72	702657	7.07	341221	9.25	531801	11.43	462993	15.78	468300	18.02
M97427-2	171997	5.72	701838	7.07	343974	9.25	521496	11.43	464968	15.78	458609	18.02
ZZZZZZ	178896	5.72	714774	7.07	351291	9.25	547595	11.43	461989	15.78	464311	18.02
ZZZZZZ	181307	5.72	744551	7.07	356081	9.25	547214	11.43	487837	15.78	480694	18.02
ZZZZZZ	185150	5.72	769476	7.06	368321	9.25	552772	11.43	509251	15.78	488099	18.01
OP23963-MB	223635	5.72	904117	7.06	444024	9.25	667369	11.43	570705	15.78	517933	18.01
OP23963-BS	186914	5.72	726279	7.07	342642	9.25	512609	11.43	449976	15.78	399841	18.02
OP23963-MS	183005	5.72	707658	7.06	332292	9.25	481805	11.43	405146	15.78	365992	18.01
OP23963-MSD	207483	5.72	810349	7.07	400003	9.25	602490	11.43	496412	15.78	458168	18.02
M97350-10	202524	5.72	844111	7.06	400402	9.25	594470	11.43	502754	15.78	475366	18.01

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.2  
6

# Semivolatile Surrogate Recovery Summary

Job Number: M97347

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8270C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M97347-2	I70233.D	37.0	23.0	69.0	68.0	70.0	75.0
M97347-3	I70234.D	40.0	24.0	73.0	72.0	75.0	85.0
M97347-4	S21215.D	38.0	23.0	87.0	72.0	74.0	77.0
M97347-5	S21216.D	38.0	23.0	87.0	78.0	78.0	85.0
M97347-6	S21217.D	38.0	22.0	84.0	75.0	77.0	84.0
OP23942-BS	I70222.D	50.0	32.0	78.0	83.0	81.0	85.0
OP23942-MB	I70221.D	43.0	26.0	65.0	74.0	73.0	82.0
OP23942-MS	I70223.D	49.0	31.0	78.0	84.0	82.0	86.0
OP23942-MSD	I70224.D	49.0	31.0	76.0	80.0	78.0	85.0

Surrogate Compounds	Recovery Limits
---------------------	-----------------

S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

6.5.1

6



# Roxana Groundwater Quarterly – 1st Quarter 2011

Laboratory SDG: M97395

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 2/24/2011

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
TB-ROX-012411	MW12-ROX-012411
MW11-ROX-012411	MW10-ROX-012411
MW10-ROX-012411DUP	P54-ROX-012411
MW13-ROX-012511EB	MW13-ROX-012511
MW7-ROX-012511	MW8-ROX-012511
MW8-ROX-012511DUP	

## 1.0 Data Package Completeness

*Were all items delivered as specified in the QAPP and COC as appropriate?*

Yes

## 2.0 Laboratory Case Narrative \ Cooler Receipt Form

*Were problems noted in the laboratory case narrative or cooler receipt form?*

Yes, the laboratory case narrative indicated VOC and SVOC LCS/LCSD recoveries were outside evaluation criteria. VOC MS/MSD recoveries and MS/MSD RPDs were outside of evaluation criteria. VOC surrogate recoveries were outside evaluation criteria in samples MW7-ROX-012511, MW8-ROX-012511 and MW8-ROX-012511DUP. Internal standard recoveries for samples MW8-ROX-012511 and MW8-ROX-012511DUP were outside of evaluation criteria. Although not indicated in the laboratory case narrative, acetone and methylene chloride were detected in the trip blank; benzene and methyl tert-butyl ether were detected in the equipment blank. Bromomethane and diethyl phthalate were detected in the method blank. The compound phenol was qualified in field duplicate pair MW8-ROX-012511/MW8-ROX-012511DUP due to field duplicate RPD outside evaluation criteria. In addition several samples were diluted due to high levels of target analytes. The compounds benzene and/or toluene exceeded calibration range in samples MW7-ROX-012511 and field duplicates MW8-ROX-012511/MW8-ROX-012511DUP; these samples were rerun at dilution and reported from the second run; other compounds, except for toluene in the field duplicate sample which exceeded calibration range in the diluted run, were reported from the original analysis. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated samples were received by the laboratory at 1.9°C which was outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required.

### 3.0 Holding Times

Were samples extracted/analyzed within applicable limits?

Yes

### 4.0 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

Yes. The following table summarizes analytes detected in sample-associated blanks.

Blank ID	Parameter	Analyte	Concentration/ Amount
TB-ROX-012411	VOCs	Acetone	11.8 µg/L
TB-ROX-012411	VOCs	Methylene chloride	3.7 µg/L
MW-13-ROX-012511EB	VOCs	Benzene	2.1 µg/L
MW-13-ROX-012511EB	VOCs	Methyl Tert Butyl Ether	2.1 µg/L
MSL1644-MB	VOCs	Bromomethane	12.0 µg/L
OP23969-MB	VOCs	Diethyl phthalate	0.63 µg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
MW12-ROX-012411	SVOCs	Diethyl phthalate	-	U
MW-11-ROX-012411	SVOCs	Diethyl phthalate	-	U
MW10-ROX-012411	VOCs	Acetone	12.2	U
MW10-ROX-012411	SVOCs	Diethyl phthalate	-	U
MW10-ROX-012411DUP	SVOCs	Diethyl phthalate	-	U
P54-ROX-012411	VOCs	Acetone	-	U
P54-ROX-012411	VOCs	Benzene	-	U
P54-ROX-012411	SVOCs	Diethyl phthalate	-	U
MW13-ROX-012511	SVOCs	Diethyl phthalate	-	U
MW7-ROX-012511	VOCs	Methyl Tert Butyl Ether	5.7	U
MW7-ROX-012511	SVOCs	Diethyl phthalate	-	U
MW8-ROX-012511	VOCs	Acetone	46.9	U
MW8-ROX-012511	SVOCs	Diethyl phthalate	-	U
MW8-ROX-012511DUP	VOCs	Acetone	40.3	U

## 5.0 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No

LCS/LCSD ID	Parameter	Analyte	LCS/LCSD Recovery	RPD	LCS/LCSD/ RPD Criteria
MSG4155-BS	VOCs	Dichlorodifluoromethane	67	NA	70-130
MSL1644-BS/BSD	VOCs	2-Butanone	132/117	12	70-130/25
MSL1644-BS/BSD	VOCs	4-Methyl-2-pentanone	142/146	3	70-130/25
OP23969-BS	SVOCs	Aniline	39	NA	40-140
OP23969-BS	SVOCs	4-Chloroaniline	34	NA	40-140
OP23969-BS	SVOCs	Hexachlorocyclopentadiene	31	NA	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW12-ROX-012411	SVOCs	Aniline	UJ
MW12-ROX-012411	SVOCs	4-Chloroaniline	UJ
MW12-ROX-012411	SVOCs	Hexachlorocyclopentadiene	UJ
MW11-ROX-012411	SVOCs	Aniline	UJ
MW11-ROX-012411	SVOCs	4-Chloroaniline	UJ
MW11-ROX-012411	SVOCs	Hexachlorocyclopentadiene	UJ
MW10-ROX-012411	SVOCs	Aniline	UJ
MW10-ROX-012411	SVOCs	4-Chloroaniline	UJ
MW10-ROX-012411	SVOCs	Hexachlorocyclopentadiene	UJ
MW10-ROX-012411DUP	SVOCs	Aniline	UJ
MW10-ROX-012411DUP	SVOCs	4-Chloroaniline	UJ
MW10-ROX-012411DUP	SVOCs	Hexachlorocyclopentadiene	UJ
P54-ROX-012411	SVOCs	Aniline	UJ
P54-ROX-012411	SVOCs	4-Chloroaniline	UJ
P54-ROX-012411	SVOCs	Hexachlorocyclopentadiene	UJ
MW-13-ROX-012511	SVOCs	Aniline	UJ
MW-13-ROX-012511	SVOCs	4-Chloroaniline	UJ
MW-13-ROX-012511	SVOCs	Hexachlorocyclopentadiene	UJ
MW7-ROX-012511	SVOCs	Aniline	UJ
MW7-ROX-012511	SVOCs	4-Chloroaniline	UJ
MW7-ROX-012511	SVOCs	Hexachlorocyclopentadiene	UJ
MW8-ROX-12511	SVOCs	Aniline	UJ
MW8-ROX-12511	SVOCs	4-Chloroaniline	UJ

Sample ID	Parameter	Analyte	Qualification
MW8-ROX-12511	SVOCs	Hexachlorocyclopentadiene	UJ
MW8-ROX-12511DUP	SVOCs	Aniline	UJ
MW8-ROX-12511DUP	SVOCs	4-Chloroaniline	UJ
MW8-ROX-12511DUP	SVOCs	Hexachlorocyclopentadiene	UJ

## 6.0 Surrogate Recoveries

*Were surrogate recoveries within evaluation criteria?*

No

Sample ID	Parameter	Surrogate	Recovery	Criteria
MW7-ROX-012511	VOCs	Dibromofluoromethane	38	70-130
MW7-ROX-012511	VOCs	Toluene-D8	149	70-130
MW8-ROX-012511	VOCs	Dibromofluoromethane	38	70-130
MW8-ROX-012511	VOCs	Toluene-D8	269	70-130
MW8-ROX-012511DUP	VOCs	Toluene-D8	257	70-130

Analytical data that required qualification based on surrogate data are included in the table below. Analytical data reported as non-detect and associated with surrogate recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
MW7-ROX-012511	VOCs	All VOC detects/nondetects	J/UJ
MW8-ROX-012511	VOCs	All VOC detects/nondetects	J/UJ
MW8-ROX-012511DUP	VOCs	All VOC detects	J

## 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

*Were MS/MSD samples analyzed as part of this SDG?*

Yes. Sample MW12-ROX-012411 was spiked and analyzed for VOCs.

*Were MS/MSD recoveries within evaluation criteria?*

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery (%)	RPD (%)	MS/MSD/RPD Criteria (%)
MW12-ROX-012411	VOCs	Benzene	766/456	51	70-130/30
MW12-ROX-012411	VOCs	Methyl Tert Butyl Ether	69/67	7	70-130/30
MW12-ROX-012411	VOCs	Vinyl Acetate	71/69	2	70-130/30

Analytical results reported as nondetect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS recoveries for Methyl Tert Butyl Ether and Vinyl Acetate were within evaluation criteria, therefore no qualification of data was required.

## 8.0 Internal Standard (IS) Recoveries

Were internal standard area recoveries within evaluation criteria?

No

Sample ID	Parameter	Analyte	IS Area Recovery	IS Criteria
MW8-ROX-012511-Run#1	VOCs	1,4-difluorobenzene	70927	90905-363618
MW8-ROX-012511DUP-Run#1	VOCs	1,4-difluorobenzene	84425	90905-363618

Analytical data that required qualification based on IS data are included in the table below. The compounds benzene and toluene exceeded calibration range in the original run. Benzene was within calibration range in the second run, however toluene was not. Benzene was reported from the second run and toluene was reported from the first run. All VOC detects reported from the first run were qualified estimated detect (J), therefore toluene was included with the J-qualified results and did not require further qualification.

Sample ID	Parameter	Analyte	Qualification
MW8-ROX-012511-Run#1	VOCs	All VOC detects/non-detects	J/UJ
MW8-ROX-012511DUP-Run#1	VOCs	All VOC detects/non-detects	J/UJ

## 9.0 Laboratory Duplicate Results

Were laboratory duplicate samples collected as part of this SDG?

No

## 10.0 Field Duplicate Results

Were field duplicate samples collected as part of this SDG?

Yes

Field ID	Field Duplicate ID
MW10-ROX-012411	MW10-ROX-012411DUP
MW8-ROX-012511	MW8-ROX-012511DUP

Were field duplicates within evaluation criteria?

No

Field ID	Field Duplicate ID	Analyte	RPD (%)	Qualification
MW8-ROX-012511	MW8-ROX-012511DUP	Phenol	36	J

**11.0 Sample Dilutions**

*For samples that were diluted and nondetect, were undiluted results also reported?*

Not applicable; analytes were reported in samples that were diluted.

**12.0 Additional Qualifications**

*Were additional qualifications applied?*

No



03/08/11

Technical Report for

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Shell Oil

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

SAP#340061

Accutest Job Number: M97395

Sampling Dates: 01/24/11 - 01/25/11

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Report to:

URS Corporation

Elizabeth\_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

Reviewed  
on  
3/8/2011

Total number of pages in report: 98



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Reza Fand*  
Reza Fand  
Lab Director

Client Service contact: Kristen Blanchard 508-481-6200

Certifications: MA (M-MA136, SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.

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## Sample Summary

Shell Oil

Job No: M97395

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

Sample Number	Collected		Received	Matrix		Client Sample ID
	Date	Time By		Code	Type	
M97395-1	01/24/11	00:00	01/26/11	AQ	Trip Blank Water	TB-ROX-012411
M97395-2	01/24/11	10:00	01/26/11	AQ	Ground Water	MW12-ROX-012411
M97395-2D	01/24/11	10:00	01/26/11	AQ	Water Dup/MSD	MW12-ROX-012411
M97395-2S	01/24/11	10:00	01/26/11	AQ	Water Matrix Spike	MW12-ROX-012411
M97395-3	01/24/11	11:35	01/26/11	AQ	Ground Water	MW11-ROX-012411
M97395-4	01/24/11	12:50	01/26/11	AQ	Ground Water	MW10-ROX-012411
M97395-5	01/24/11	12:50	01/26/11	AQ	Ground Water	MW10-ROX-012411DUP
M97395-6	01/24/11	14:55	01/26/11	AQ	Ground Water	P54-ROX-012411
M97395-7	01/25/11	08:00	01/26/11	AQ	Equipment Blank	MW13-ROX-012511EB
M97395-8	01/25/11	11:10	01/26/11	AQ	Ground Water	MW13-ROX-012511
M97395-9	01/25/11	14:35	01/26/11	AQ	Ground Water	MW7-ROX-012511
M97395-10	01/25/11	13:25	01/26/11	AQ	Ground Water	MW8-ROX-012511
M97395-11	01/25/11	13:25	01/26/11	AQ	Ground Water	MW8-ROX-012511 DUP

## SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil

Job No M97395

Site: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Report Date 2/10/2011 12:46:38 PM

10 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on between 01/24/2011 and 01/25/2011 and were received at Accutest on 01/26/2011 properly preserved, at 1.9 Deg. C and intact. These Samples received an Accutest job number of M97395. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: MSG4155
-----------	-------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) M97501-3MS, M97501-3MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for Dichlorodifluoromethane are outside control limits. Blank Spike meets program technical requirements.

Matrix AQ	Batch ID: MSL1644
-----------	-------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) M97395-2MS, M97395-2MSD were used as the QC samples indicated.
- Sample(s) M97395-1 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Blank Spike Recovery(s) for 2-Butanone (MEK), 4-Methyl-2-pentanone (MIBK) are outside control limits. Associated samples are non-detect for this compound.
- Matrix Spike Recovery(s) for Methyl Tert Butyl Ether are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Methyl Tert Butyl Ether, Vinyl Acetate are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- RPD(s) for MSD for Benzene are outside control limits for sample M97395-2MSD. High RPD due to possible matrix interference and/or sample non-homogeneity.
- Blank Spike Duplicate Recovery(s) for 4-Methyl-2-pentanone (MIBK) are outside control limits. Associated samples are non-detect for this compound.
- MSL1644-BS for 4-Methyl-2-pentanone (MIBK): Outside control limits. Associated samples are non-detect for this compound.
- M97395-11 for Toluene-D8: Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- M97395-9, 10 for Dibromofluoromethane, Toluene-D8: Outside control limits due to possible matrix interference. Confirmed by reanalysis.
- M97395-2MS/2MSD for Benzene: Outside control limits due to possible sample carryover.
- M97395-10, 11 has internal standards outside control limits due to possible matrix interference. Confirmed by reanalysis.

Matrix AQ	Batch ID: MSN1863
-----------	-------------------

- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M97571-1MS, M97571-1MSD were used as the QC samples indicated.

## Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP23969
-----------	-------------------

2

- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- Sample(s) M97395-2MS, M97395-2MSD were used as the QC samples indicated.
- Sample(s) M97395-10, M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9 have compound(s) reported with a "B" qualifier, indicating analyte is found in the associated method blank.
- Blank Spike Recovery(s) for 4-Chloroaniline, Aniline, Hexachlorocyclopentadiene are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 4-Chloroaniline are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 4-Chloroaniline, Aniline are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- OP23969-MS/MSD for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene: Outside control limits. Blank Spike meets program technical requirements.

The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M97395).

Sample Results

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Report of Analysis

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## Report of Analysis



Client Sample ID:	TB-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-1	Date Received:	01/26/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	L49358.D	1	02/03/11	AMY	n/a	n/a	MSL1644

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	11.8	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	11.7	2.0	0.95	ug/l	B
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-1	Date Received:	01/26/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	3.7	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	89%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW12-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-2	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	L49366.D	1	02/03/11	AMY	n/a	n/a	MSL1644

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3.2  
3

Client Sample ID: MW12-ROX-012411		Date Sampled: 01/24/11
Lab Sample ID: M97395-2		Date Received: 01/26/11
Matrix: AQ - Ground Water		Percent Solids: n/a
Method: SW846 8260B		
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

**VOA 8260 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	102%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	91%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW12-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-2	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21267.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	"uJ"
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	"uJ"
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW12-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-2	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	0.770.0ND	5.0	0.61	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	"u"
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		15-110%
4165-62-2	Phenol-d5	30%		15-110%
118-79-6	2,4,6-Tribromophenol	79%		15-110%
4165-60-0	Nitrobenzene-d5	77%		30-130%
321-60-8	2-Fluorobiphenyl	77%		30-130%
1718-51-0	Terphenyl-d14	65%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW11-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-3	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	L49367.D	1	02/03/11	AMY	n/a	n/a	MSL1644

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW11-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-3	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	97%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	95%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW11-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-3	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21268.D	1	02/04/11	PR	01/27/11	OP23969	MSS890

Run #1	Initial Volume	Final Volume
Run #2	960 ml	1.0 ml

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.80	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.71	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.72	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.50	ug/l	
	3&4-Methylphenol	ND	10	0.66	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.69	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.2	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.42	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.39	ug/l	
83-32-9	Acenaphthene	ND	5.2	0.35	ug/l	
208-96-8	Acenaphthylene	ND	5.2	1.3	ug/l	
62-53-3	Aniline	ND	10	0.47	ug/l	"uJ"
120-12-7	Anthracene	ND	5.2	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.2	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.2	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.2	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.2	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.2	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.60	ug/l	"uJ"
218-01-9	Chrysene	ND	5.2	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW11-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-3	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.64	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.2	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.2	0.33	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.35	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	0.35	ug/l	
84-66-2	Diethyl phthalate	<del>1.0</del> 0.0 ND	5.2	0.64	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.2	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.73	2.1	0.51	ug/l	J
206-44-0	Fluoranthene	ND	5.2	0.23	ug/l	
86-73-7	Fluorene	ND	5.2	0.30	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	0.16	ug/l	"uJ"
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.2	0.45	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.2	0.30	ug/l	
78-59-1	Isophorone	ND	5.2	0.49	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.2	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.35	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.35	ug/l	
91-20-3	Naphthalene	ND	5.2	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.42	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.64	ug/l	
85-01-8	Phenanthrene	ND	5.2	0.27	ug/l	
129-00-0	Pyrene	ND	5.2	0.26	ug/l	
110-86-1	Pyridine	ND	10	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	33%		15-110%
118-79-6	2,4,6-Tribromophenol	71%		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	79%		30-130%
1718-51-0	Terphenyl-d14	77%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-4	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L49368.D	1	02/03/11	AMY	n/a	n/a	MSL1644
Run #2							

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	<del>12.2</del> ND	5.0	4.6	ug/l	"u"
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-4	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	102%		70-130%
460-00-4	4-Bromofluorobenzene	94%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW10-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-4	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21269.D	1	02/04/11	PR	01/27/11	OP23969	MSS890

Run #1	Initial Volume	Final Volume
Run #2	980 ml	1.0 ml

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.79	ug/l	
95-57-8	2-Chlorophenol	ND	5.1	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.58	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.49	ug/l	
	3&4-Methylphenol	ND	10	0.64	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.67	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.1	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.1	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.1	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.1	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	"uJ"
120-12-7	Anthracene	ND	5.1	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.1	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.1	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.1	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.1	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	"uJ"
218-01-9	Chrysene	ND	5.1	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.21	ug/l	

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-4	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.62	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.1	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.34	ug/l	
84-66-2	Diethyl phthalate	ND	5.1	0.62	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.1	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.68	2.0	0.50	ug/l	J
206-44-0	Fluoranthene	ND	5.1	0.22	ug/l	
86-73-7	Fluorene	ND	5.1	0.30	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	"u"
67-72-1	Hexachloroethane	ND	5.1	0.44	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.1	0.29	ug/l	
78-59-1	Isophorone	ND	5.1	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.1	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.1	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.62	ug/l	
85-01-8	Phenanthrene	ND	5.1	0.26	ug/l	
129-00-0	Pyrene	ND	5.1	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	48%		15-110%
4165-62-2	Phenol-d5	31%		15-110%
118-79-6	2,4,6-Tribromophenol	90%		15-110%
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	81%		30-130%
1718-51-0	Terphenyl-d14	79%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411DUP	Date Sampled:	01/24/11
Lab Sample ID:	M97395-5	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	L49369.D	1	02/03/11	AMY	n/a	n/a	MSL1644

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411DUP	Date Sampled:	01/24/11
Lab Sample ID:	M97395-5	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
74-88-4	Iodomethane	ND	5.0	0.47	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
1330-20-7	Xylene (total)	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	86%		70-130%
2037-26-5	Toluene-D8	101%		70-130%
460-00-4	4-Bromofluorobenzene	101%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411DUP	Date Sampled:	01/24/11
Lab Sample ID:	M97395-5	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21270.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	"u5"
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	"u5"
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW10-ROX-012411DUP	Date Sampled:	01/24/11
Lab Sample ID:	M97395-5	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	1-2 COND	5.0	0.61	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.71	2.0	0.49	ug/l	J
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	"u"
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	46%		15-110%
4165-62-2	Phenol-d5	32%		15-110%
118-79-6	2,4,6-Tribromophenol	87%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	77%		30-130%
1718-51-0	Terphenyl-d14	77%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	P54-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-6	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	G103080.D	1	02/07/11	EL	n/a	n/a	MSG4155

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	<del>4.8</del> <sup>0.5</sup> ND	5.0	4.6	ug/l	"u"
71-43-2	Benzene	<del>0.390</del> <sup>0.5</sup> ND	0.50	0.35	ug/l	"u"
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	P54-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-6	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	99%		70-130%
460-00-4	4-Bromofluorobenzene	98%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

3.6  
3

Client Sample ID:	P54-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-6	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21271.D	1	02/04/11	PR	01/27/11	OP23969	MSS890

Run #1	Initial Volume	Final Volume
Run #2	1000 ml	1.0 ml

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	“UJ”
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	“UJ”
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	P54-ROX-012411	Date Sampled:	01/24/11
Lab Sample ID:	M97395-6	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	<del>2.00-0ND</del>	5.0	0.61	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	"u"
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	38%		15-110%
4165-62-2	Phenol-d5	28%		15-110%
118-79-6	2,4,6-Tribromophenol	67%		15-110%
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	85%		30-130%
1718-51-0	Terphenyl-d14	96%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW13-ROX-012511EB	Date Sampled:	01/25/11
Lab Sample ID:	M97395-7	Date Received:	01/26/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L49359.D	1	02/03/11	AMY	n/a	n/a	MSL1644
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	2.1	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3.7  
3

Client Sample ID: MW13-ROX-012511EB	Date Sampled: 01/25/11
Lab Sample ID: M97395-7	Date Received: 01/26/11
Matrix: AQ - Equipment Blank	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

**VOA 8260 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	2.1	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	100%		70-130%
2037-26-5	Toluene-D8	100%		70-130%
460-00-4	4-Bromofluorobenzene	115%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW13-ROX-012511EB	Date Sampled:	01/25/11
Lab Sample ID:	M97395-7	Date Received:	01/26/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21272.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #	Initial Volume	Final Volume
Run #1	970 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.79	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.59	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.49	ug/l	
	3&4-Methylphenol	ND	10	0.65	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.68	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.2	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.39	ug/l	
83-32-9	Acenaphthene	ND	5.2	0.35	ug/l	
208-96-8	Acenaphthylene	ND	5.2	1.3	ug/l	
62-53-3	Aniline	ND	10	0.47	ug/l	
120-12-7	Anthracene	ND	5.2	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.2	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.2	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.2	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.2	0.63	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.2	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	
218-01-9	Chrysene	ND	5.2	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW13-ROX-012511EB	Date Sampled:	01/25/11
Lab Sample ID:	M97395-7	Date Received:	01/26/11
Matrix:	AQ - Equipment Blank	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.63	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.2	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.2	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.35	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	0.35	ug/l	
84-66-2	Diethyl phthalate	2.0	5.2	0.63	ug/l	JB
131-11-3	Dimethyl phthalate	ND	5.2	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.50	ug/l	
206-44-0	Fluoranthene	ND	5.2	0.22	ug/l	
86-73-7	Fluorene	ND	5.2	0.30	ug/l	
118-74-1	Hexachlorobenzene	ND	5.2	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.2	0.44	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.2	0.30	ug/l	
78-59-1	Isophorone	ND	5.2	0.49	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.2	0.32	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.2	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.42	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.63	ug/l	
85-01-8	Phenanthrene	ND	5.2	0.26	ug/l	
129-00-0	Pyrene	ND	5.2	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	51%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	87%		15-110%
4165-60-0	Nitrobenzene-d5	87%		30-130%
321-60-8	2-Fluorobiphenyl	86%		30-130%
1718-51-0	Terphenyl-d14	95%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW13-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-8	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	N49339.D	1	02/08/11	JP	n/a	n/a	MSN1863

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW13-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-8	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%		70-130%
2037-26-5	Toluene-D8	105%		70-130%
460-00-4	4-Bromofluorobenzene	106%		70-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Report of Analysis

Client Sample ID:	MW13-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-8	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21273.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	960 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.80	ug/l	
95-57-8	2-Chlorophenol	ND	5.2	0.71	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.72	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.2	ug/l	
95-48-7	2-Methylphenol	ND	10	0.50	ug/l	
	3&4-Methylphenol	ND	10	0.66	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.69	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.2	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	ND	5.2	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.42	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.39	ug/l	
83-32-9	Acenaphthene	ND	5.2	0.35	ug/l	
208-96-8	Acenaphthylene	ND	5.2	1.3	ug/l	
62-53-3	Aniline	ND	10	0.47	ug/l	"UJ"
120-12-7	Anthracene	ND	5.2	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.2	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.2	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.2	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.2	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.2	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.2	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.2	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.2	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.60	ug/l	"UJ"
218-01-9	Chrysene	ND	5.2	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.2	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.2	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.2	0.22	ug/l	

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	MW13-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-8	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.2	0.64	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.2	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.2	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.2	0.33	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.2	0.35	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.2	0.35	ug/l	
84-66-2	Diethyl phthalate	2.7 <sup>C.6ND</sup>	5.2	0.64	ug/l	JB "UV"
131-11-3	Dimethyl phthalate	ND	5.2	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.51	ug/l	
206-44-0	Fluoranthene	ND	5.2	0.23	ug/l	
86-73-7	Fluorene	0.44	5.2	0.30	ug/l	J
118-74-1	Hexachlorobenzene	ND	5.2	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	"UV"
67-72-1	Hexachloroethane	ND	5.2	0.45	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.2	0.30	ug/l	
78-59-1	Isophorone	ND	5.2	0.49	ug/l	
91-57-6	2-Methylnaphthalene	2.1	5.2	0.32	ug/l	J
88-74-4	2-Nitroaniline	ND	10	0.35	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.35	ug/l	
91-20-3	Naphthalene	ND	5.2	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.2	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.2	0.42	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.2	0.64	ug/l	
85-01-8	Phenanthrene	1.2	5.2	0.27	ug/l	J
129-00-0	Pyrene	0.32	5.2	0.26	ug/l	J
110-86-1	Pyridine	ND	10	0.52	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	53%		15-110%
4165-62-2	Phenol-d5	35%		15-110%
118-79-6	2,4,6-Tribromophenol	99%		15-110%
4165-60-0	Nitrobenzene-d5	86%		30-130%
321-60-8	2-Fluorobiphenyl	90%		30-130%
1718-51-0	Terphenyl-d14	89%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

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Client Sample ID:	MW7-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-9	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L49372.D	1	02/03/11	AMY	n/a	n/a	MSL1644
Run #2	N49340.D	10000	02/08/11	JP	n/a	n/a	MSN1863

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	"uJ"
71-43-2	Benzene	1150000 <sup>a</sup>	5000	3500	ug/l	"uJ"
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	1.5	5.0	0.49	ug/l	"J"
135-98-8	sec-Butylbenzene	1.1	5.0	0.37	ug/l	"J"
98-06-6	tert-Butylbenzene	1.2	5.0	0.53	ug/l	"J"
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	"uJ"
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis



Client Sample ID:	MW7-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-9	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	"uJ"
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	"uJ"
563-58-6	1,1-Dichloropropane	ND	5.0	0.34	ug/l	"uJ"
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	"uJ"
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	"uJ"
100-41-4	Ethylbenzene	32.5	1.0	0.61	ug/l	"uJ"
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	"uJ"
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	"uJ"
98-82-8	Isopropylbenzene	4.0	5.0	0.51	ug/l	"uJ"
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	"uJ"
1634-04-4	Methyl Tert Butyl Ether	5.7 <sup>0.0</sup> ND	1.0 <sup>5.7</sup>	0.54	ug/l	"uJ"
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	"uJ"
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	"uJ"
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	"uJ"
103-65-1	n-Propylbenzene	5.8	5.0	0.43	ug/l	"uJ"
100-42-5	Styrene	ND	5.0	0.68	ug/l	"uJ"
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	"uJ"
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	"uJ"
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	"uJ"
108-88-3	Toluene	90.7	1.0	0.74	ug/l	"uJ"
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	"uJ"
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	"uJ"
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	"uJ"
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	"uJ"
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	"uJ"
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	"uJ"
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	"uJ"
95-63-6	1,2,4-Trimethylbenzene	55.2	5.0	0.62	ug/l	"uJ"
108-67-8	1,3,5-Trimethylbenzene	13.3	5.0	0.51	ug/l	"uJ"
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"uJ"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	"uJ"
	m,p-Xylene	69.4	1.0	0.62	ug/l	"uJ"
95-47-6	o-Xylene	23.5	1.0	0.56	ug/l	"uJ"

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	38% <sup>b</sup>	100%	70-130%
2037-26-5	Toluene-D8	149% <sup>b</sup>	106%	70-130%
460-00-4	4-Bromofluorobenzene	88%	105%	70-130%

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID: MW7-ROX-012511		
Lab Sample ID: M97395-9	Date Sampled: 01/25/11	
Matrix: AQ - Ground Water	Date Received: 01/26/11	
Method: SW846 8260B	Percent Solids: n/a	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

**VOA 8260 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) Result is from Run# 2
- (b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW7-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-9	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21274.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #	Initial Volume	Final Volume
Run #1	950 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.81	ug/l	
95-57-8	2-Chlorophenol	ND	5.3	0.72	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.60	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.73	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.50	ug/l	
	3&4-Methylphenol	0.99	11	0.66	ug/l	J
88-75-5	2-Nitrophenol	ND	11	0.69	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	73.7	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.42	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	"45"
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.64	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	"45"
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW7-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-9	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.64	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.35	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.33	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.35	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	3-0 G.S.WD	5.3	0.64	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.51	ug/l	
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	"u"
77-47-4	Hexachlorocyclopentadiene	ND	11	2.6	ug/l	
67-72-1	Hexachloroethane	ND	5.3	0.45	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.30	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	2.3	5.3	0.32	ug/l	J
88-74-4	2-Nitroaniline	ND	11	0.35	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.34	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.35	ug/l	
91-20-3	Naphthalene	5.8	5.3	0.34	ug/l	
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.64	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	43%		15-110%
4165-62-2	Phenol-d5	28%		15-110%
118-79-6	2,4,6-Tribromophenol	79%		15-110%
4165-60-0	Nitrobenzene-d5	73%		30-130%
321-60-8	2-Fluorobiphenyl	73%		30-130%
1718-51-0	Terphenyl-d14	82%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW8-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-10	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L49373.D	1	02/03/11	AMY	n/a	n/a	MSL1644
Run #2	N49341.D	10000	02/08/11	JP	n/a	n/a	MSN1863

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	46.9 <sup>46.9</sup> <del>0.0</del> ND	5.0	4.6	ug/l	"U"
71-43-2	Benzene	986000 <sup>a</sup>	5000	3500	ug/l	"UJ"
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	"UJ"
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	↓ "J" "J" "UJ"
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	2.1	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	1.4	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

Client Sample ID:	MW8-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-10	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	"US"
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	↓
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	"J"
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	"US"
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	"US"
100-41-4	Ethylbenzene	234	1.0	0.61	ug/l	"J"
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	"US"
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	"US"
98-82-8	Isopropylbenzene	10.4	5.0	0.51	ug/l	"J"
99-87-6	p-Isopropyltoluene	1.2	5.0	0.45	ug/l	"J"
1634-04-4	Methyl Tert Butyl Ether	210	1.0	0.54	ug/l	"J"
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	"US"
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	↓
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	"US"
103-65-1	n-Propylbenzene	17.3	5.0	0.43	ug/l	"US"
100-42-5	Styrene	ND	5.0	0.68	ug/l	"US"
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	↓
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	"US"
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	↓
108-88-3	Toluene	1200	1.0	0.74	ug/l	"B"
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	"US"
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	↓
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	"US"
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	↓
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	"US"
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	↓
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	"US"
95-63-6	1,2,4-Trimethylbenzene	109	5.0	0.62	ug/l	"US"
108-67-8	1,3,5-Trimethylbenzene	33.2	5.0	0.51	ug/l	"US"
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"US"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	"US"
	m,p-Xylene	499	1.0	0.62	ug/l	"US"
95-47-6	o-Xylene	188	1.0	0.56	ug/l	"US"

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	38% <sup>b</sup>	99%	70-130%
2037-26-5	Toluene-D8	269% <sup>b</sup>	105%	70-130%
460-00-4	4-Bromofluorobenzene	91%	104%	70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

Client Sample ID:	MW8-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-10	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) Result is from Run# 2
- (b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW8-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-10	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21275.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	1000 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	23.3	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	19.5	10	0.48	ug/l	
	3&4-Methylphenol	50.2	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	119	5.0	2.1	ug/l	"J"
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	"UJ"
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	"UJ"
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.10  
3

Client Sample ID:	MW8-ROX-012511	Date Sampled:	01/25/11
Lab Sample ID:	M97395-10	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	0.40	5.0	0.34	ug/l	J
84-66-2	Diethyl phthalate	2.5 COND	5.0	0.61	ug/l	JB "u"
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	0.86	2.0	0.49	ug/l	J
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	"uJ"
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	6.9	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	26.0	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	52%		15-110%
4165-62-2	Phenol-d5	34%		15-110%
118-79-6	2,4,6-Tribromophenol	90%		15-110%
4165-60-0	Nitrobenzene-d5	81%		30-130%
321-60-8	2-Fluorobiphenyl	80%		30-130%
1718-51-0	Terphenyl-d14	83%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.11  
3

<b>Client Sample ID:</b> MW8-ROX-012511 DUP	
<b>Lab Sample ID:</b> M97395-11	<b>Date Sampled:</b> 01/25/11
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/26/11
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	L49374.D	1	02/03/11	AMY	n/a	n/a	MSL1644
Run #2	N49342.D	10000	02/08/11	JP	n/a	n/a	MSN1863

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	40.50 ND	5.0	4.6	ug/l	"u"
71-43-2	Benzene	1030000 <sup>a</sup>	5000	3500	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	"u"
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	2.0	5.0	0.49	ug/l	"J"
135-98-8	sec-Butylbenzene	1.4	5.0	0.37	ug/l	"J"
98-06-6	tert-Butylbenzene	1.1	5.0	0.53	ug/l	"J"
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	"u"
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	MW8-ROX-012511 DUP	Date Sampled:	01/25/11
Lab Sample ID:	M97395-11	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	" U J "
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	↓
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	↓
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	↓
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	↓
100-41-4	Ethylbenzene	237	1.0	0.61	ug/l	" U J "
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	" U J "
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	" U J "
98-82-8	Isopropylbenzene	10.5	5.0	0.51	ug/l	" U J "
99-87-6	p-Isopropyltoluene	1.0	5.0	0.45	ug/l	" U J "
1634-04-4	Methyl Tert Butyl Ether	205	1.0	0.54	ug/l	" U J "
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	" U J "
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	" U J "
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	" U J "
103-65-1	n-Propylbenzene	17.0	5.0	0.43	ug/l	" U J "
100-42-5	Styrene	ND	5.0	0.68	ug/l	↓
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	↓
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	↓
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	↓
108-88-3	Toluene	1120	1.0	0.74	ug/l	" U J "
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	" U J "
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	↓
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	↓
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	↓
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	↓
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	↓
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	↓
95-63-6	1,2,4-Trimethylbenzene	110	5.0	0.62	ug/l	" U J "
108-67-8	1,3,5-Trimethylbenzene	33.6	5.0	0.51	ug/l	" U J "
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	" U J "
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	" U J "
	m,p-Xylene	518	1.0	0.62	ug/l	" U J "
95-47-6	o-Xylene	191	1.0	0.56	ug/l	" U J "

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	85%	99%	70-130%
2037-26-5	Toluene-D8	257% <sup>b</sup>	103%	70-130%
460-00-4	4-Bromofluorobenzene	90%	101%	70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.11  
3

<b>Client Sample ID:</b> MW8-ROX-012511 DUP	
<b>Lab Sample ID:</b> M97395-11	<b>Date Sampled:</b> 01/25/11
<b>Matrix:</b> AQ - Ground Water	<b>Date Received:</b> 01/26/11
<b>Method:</b> SW846 8260B	<b>Percent Solids:</b> n/a
<b>Project:</b> URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
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- (a) Result is from Run# 2
- (b) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

ND = Not detected      MDL - Method Detection Limit  
RL = Reporting Limit  
E = Indicates value exceeds calibration range

J = Indicates an estimated value  
B = Indicates analyte found in associated method blank  
N = Indicates presumptive evidence of a compound

Report of Analysis

3.11  
3

Client Sample ID:	MW8-ROX-012511 DUP	Date Sampled:	01/25/11
Lab Sample ID:	M97395-11	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21276.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
Run #2							

Run #1	Initial Volume	Final Volume
Run #1	880 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.87	ug/l	
95-57-8	2-Chlorophenol	ND	5.7	0.77	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.65	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.79	ug/l	
105-67-9	2,4-Dimethylphenol	29.9	11	2.4	ug/l	
51-28-5	2,4-Dinitrophenol	ND	23	2.8	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.7	ug/l	
95-48-7	2-Methylphenol	22.8	11	0.54	ug/l	
	3&4-Methylphenol	58.7	11	0.71	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.75	ug/l	
100-02-7	4-Nitrophenol	ND	23	5.7	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.8	ug/l	
108-95-2	Phenol	171	5.7	2.3	ug/l	"J"
95-95-4	2,4,5-Trichlorophenol	ND	11	0.46	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.43	ug/l	
83-32-9	Acenaphthene	ND	5.7	0.38	ug/l	
208-96-8	Acenaphthylene	ND	5.7	1.4	ug/l	
62-53-3	Aniline	ND	11	0.52	ug/l	"J"
120-12-7	Anthracene	ND	5.7	0.31	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.7	0.31	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.7	0.26	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.7	0.31	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.7	0.70	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.7	0.33	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.7	0.36	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.7	0.46	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.7	0.35	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.65	ug/l	"J"
218-01-9	Chrysene	ND	5.7	0.25	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.7	0.40	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.7	0.27	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.7	0.24	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



### Report of Analysis

3.11  
3

Client Sample ID:	MW8-ROX-012511 DUP	Date Sampled:	01/25/11
Lab Sample ID:	M97395-11	Date Received:	01/26/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.7	0.70	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.4	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.38	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.7	2.8	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.7	0.28	ug/l	
132-64-9	Dibenzofuran	ND	5.7	0.36	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.7	0.38	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.7	0.38	ug/l	
84-66-2	Diethyl phthalate	12.5	5.7	0.70	ug/l	
131-11-3	Dimethyl phthalate	ND	5.7	1.4	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	1.2	2.3	0.56	ug/l	J
206-44-0	Fluoranthene	ND	5.7	0.25	ug/l	
86-73-7	Fluorene	ND	5.7	0.33	ug/l	
118-74-1	Hexachlorobenzene	ND	5.7	0.18	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.8	ug/l	"uv"
67-72-1	Hexachloroethane	ND	5.7	0.49	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.7	0.33	ug/l	
78-59-1	Isophorone	ND	5.7	0.54	ug/l	
91-57-6	2-Methylnaphthalene	7.5	5.7	0.35	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.38	ug/l	
99-09-2	3-Nitroaniline	ND	11	0.37	ug/l	
100-01-6	4-Nitroaniline	ND	11	0.38	ug/l	
91-20-3	Naphthalene	28.8	5.7	0.37	ug/l	
98-95-3	Nitrobenzene	ND	5.7	0.35	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.7	0.46	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.7	0.70	ug/l	
85-01-8	Phenanthrene	ND	5.7	0.29	ug/l	
129-00-0	Pyrene	ND	5.7	0.28	ug/l	
110-86-1	Pyridine	ND	11	0.57	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	55%		15-110%
4165-62-2	Phenol-d5	36%		15-110%
118-79-6	2,4,6-Tribromophenol	97%		15-110%
4165-60-0	Nitrobenzene-d5	83%		30-130%
321-60-8	2-Fluorobiphenyl	84%		30-130%
1718-51-0	Terphenyl-d14	90%		30-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Misc. Forms

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## Custody Documents and Other Forms

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Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



Shell Oil Products Chain Of Custody Record

LAB (LOCATION)  
 RETAIL  
 ON-SITE  
 OTHER (Address: 450 Thompson St W, Marlborough, MA 01752, (508-461-6000))  
 SP  
 Lab Vendor #

Please Check Appropriate Box:

<input checked="" type="checkbox"/> DRV. SERVICES	<input type="checkbox"/> NOTVA RETAIL	<input type="checkbox"/> SHELL RETAIL
<input type="checkbox"/> NOTVA SOUCH	<input type="checkbox"/> CONSULTANT	<input type="checkbox"/> LUMS
<input type="checkbox"/> SHELL PIPELINE	<input type="checkbox"/> OTHER	

Print Bill To Contact Name: WENDY PENNINGTON  
 INCIDENT # (ENV SERVICES) 97218840  
 DATE 1/25/11  
 PO # SAP #  
 PAGE 2 of 2

LAB USE ONLY  
 URS CORPORATION  
 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110  
 WENDY PENNINGTON  
 314-743-1166 or 314-452-8928 314-429-0462  
 170 EAST RAND AVENUE - HARTFORD, CT 06111  
 LEGAL OFFICE  
 ROUTING SLIP # 21567693.00003  
 LAB USE ONLY  
 M97395

TURNAROUND TIME (CALENDAR DAYS):  
 STANDARD (14 DAY)  5 DAYS  7 DAYS  10 DAYS  24 HOURS  
 RESULTS NEEDED ON WEDNESDAY

DELIVERABLES:  LEVEL 1  LEVEL 2  LEVEL 3  LEVEL 4  OTHER (SPECIFY) EOD  
 TEMPERATURE ON RECEIPT C°:  CORDER #1  CORDER #2  CORDER #3

SPECIAL INSTRUCTIONS OR NOTES:  
 QUOTE # PEK12/2010-14  
 LEVEL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 FOD NOT NEEDED  
 RECEIPT VERIFICATION REQUESTED  
 PROVIDE LEGD DISA

LAB USE ONLY	Field Sample Identification	SAMPLING		ANALYZE	PROGRAMMATIC					NO. OF ANALYSES	VOC 8260B	SYOC 8270C	PID (ppm)	FIELD NOTES: TEMPERATURE ON RECEIPT C° Container PID Readings or Laboratory Notes
		DATE	TIME		INCL	FINES	NOVOC	HCN	OTHER					
9	MW7-ROX-012511	1/25/11	1335	Water	3				2					
10	MW8-ROX-012511	1/25/11	1335		3				2					
11	MW8-ROX-012511	1/25/11	1325		3				2					

Assigned by (Signature): *[Signature]* Date: 1/25/11 Time: 1630  
 Assigned by (Signature):  
 Assigned by (Signature):

4.1  
4

M97395: Chain of Custody  
 Page 2 of 3



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: M97395 Client: URS Immediate Client Services Action Required: No  
 Date / Time Received: 1/26/2011 Delivery Method: \_\_\_\_\_ Client Service Action Required at LogIn: No  
 Project: 170 EAST RAND AVE HARTFORD No. Coolers: 2 Airbill #'s: N/A

**Cooler Security**      Y or N      Y or N  
 1. Custody Seals Present:        3. COC Present:    
 2. Custody Seals Intact:        4. Smpl Dates/Time OK

**Cooler Temperature**      Y or N  
 1. Temp criteria achieved:    
 2. Cooler temp verification: Infrared gun  
 3. Cooler media: Ice (bag)

**Quality Control Preservation**      Y or N      N/A  
 1. Trip Blank present / cooler:     
 2. Trip Blank listed on COC:     
 3. Samples preserved properly:     
 4. VOCs headspace free:

**Sample Integrity - Documentation**      Y or N  
 1. Sample labels present on bottles:    
 2. Container labeling complete:    
 3. Sample container label / COC agree:

**Sample Integrity - Condition**      Y or N  
 1. Sample recvd within HT:    
 2. All containers accounted for:    
 3. Condition of sample: Intact

**Sample Integrity - Instructions**      Y or N      N/A  
 1. Analysis requested is clear:    
 2. Bottles received for unspecified tests:    
 3. Sufficient volume recvd for analysis:    
 4. Compositing instructions clear:     
 5. Filtering instructions clear:

Comments

Accutest Laboratories  
V.508.461.6200

495 Technology Center West, Bldg One  
F: 508.461.7753

Marborough, MA  
www.accutest.com

4.1  
4

### Internal Sample Tracking Chronicle

Shell Oil

Job No: M97395

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

4.2  
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M97395-1 Collected: 24-JAN-11 00:00 By: Received: 26-JAN-11 By: JB TB-ROX-012411						
M97395-1	SW846 8260B	03-FEB-11 11:41	AMY			V8260STD
M97395-2 Collected: 24-JAN-11 10:00 By: Received: 26-JAN-11 By: JB MW12-ROX-012411						
M97395-2	SW846 8260B	03-FEB-11 15:30	AMY			V8260STD
M97395-2	SW846 8270C	04-FEB-11 00:48	PR	27-JAN-11	AJ	AB8270PPL
M97395-3 Collected: 24-JAN-11 11:35 By: Received: 26-JAN-11 By: JB MW11-ROX-012411						
M97395-3	SW846 8260B	03-FEB-11 15:59	AMY			V8260STD
M97395-3	SW846 8270C	04-FEB-11 01:14	PR	27-JAN-11	AJ	AB8270PPL
M97395-4 Collected: 24-JAN-11 12:50 By: Received: 26-JAN-11 By: JB MW10-ROX-012411						
M97395-4	SW846 8260B	03-FEB-11 16:28	AMY			V8260STD
M97395-4	SW846 8270C	04-FEB-11 01:41	PR	27-JAN-11	AJ	AB8270PPL
M97395-5 Collected: 24-JAN-11 12:50 By: Received: 26-JAN-11 By: JB MW10-ROX-012411DUP						
M97395-5	SW846 8260B	03-FEB-11 16:56	AMY			V8260STD
M97395-5	SW846 8270C	04-FEB-11 02:08	PR	27-JAN-11	AJ	AB8270PPL
M97395-6 Collected: 24-JAN-11 14:55 By: Received: 26-JAN-11 By: JB P54-ROX-012411						
M97395-6	SW846 8270C	04-FEB-11 02:35	PR	27-JAN-11	AJ	AB8270PPL
M97395-6	SW846 8260B	07-FEB-11 15:59	EL			V8260STD
M97395-7 Collected: 25-JAN-11 08:00 By: Received: 26-JAN-11 By: JB MW13-ROX-012511EB						
M97395-7	SW846 8260B	03-FEB-11 12:08	AMY			V8260STD
M97395-7	SW846 8270C	04-FEB-11 03:01	PR	27-JAN-11	AJ	AB8270PPL

### Internal Sample Tracking Chronicle

Shell Oil

Job No: M97395

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

4.2  
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
---------------	--------	----------	----	---------	----	------------

M97395-8 Collected: 25-JAN-11 11:10 By: Received: 26-JAN-11 By: JB  
 MW13-ROX-012511

M97395-8	SW846 8270C	04-FEB-11 03:28	PR	27-JAN-11	AJ	AB8270PPL
M97395-8	SW846 8260B	08-FEB-11 15:21	JP			V8260STD

M97395-9 Collected: 25-JAN-11 14:35 By: Received: 26-JAN-11 By: JB  
 MW7-ROX-012511

M97395-9	SW846 8260B	03-FEB-11 18:23	AMY			V8260STD
M97395-9	SW846 8270C	04-FEB-11 03:55	PR	27-JAN-11	AJ	AB8270PPL
M97395-9	SW846 8260B	08-FEB-11 15:49	JP			V8260STD

M97395-10 Collected: 25-JAN-11 13:25 By: Received: 26-JAN-11 By: JB  
 MW8-ROX-012511

M97395-10	SW846 8260B	03-FEB-11 18:52	AMY			V8260STD
M97395-10	SW846 8270C	04-FEB-11 04:22	PR	27-JAN-11	AJ	AB8270PPL
M97395-10	SW846 8260B	08-FEB-11 16:17	JP			V8260STD

M97395-11 Collected: 25-JAN-11 13:25 By: Received: 26-JAN-11 By: JB  
 MW8-ROX-012511 DUP

M97395-11	SW846 8260B	03-FEB-11 19:20	AMY			V8260STD
M97395-11	SW846 8270C	04-FEB-11 04:48	PR	27-JAN-11	AJ	AB8270PPL
M97395-11	SW846 8260B	08-FEB-11 16:45	JP			V8260STD

# Accutest Internal Chain of Custody

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/26/11

4.3  
**4**

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97395-1.1	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-1.1	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-1.1	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-1.1	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-2.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-2.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-2.3	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-2.3	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-2.4	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-2.4	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-2.9	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-2.9	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-2.9	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-2.9	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-2.10	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-2.10	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-2.10	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-2.10	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-2.13	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-2.13	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-2.13	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-2.13	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-2.14	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-2.14	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-2.14	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-2.14	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-3.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-3.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-3.5	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-3.5	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-3.5	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-3.5	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-4.2	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-4.2	Mahmoud Afzali		01/28/11 11:13	Depleted



# Accutest Internal Chain of Custody

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/26/11

4.3  
**4**

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97395-4.3	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-4.3	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-4.3	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-4.3	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-5.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-5.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-5.3	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-5.3	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-5.3	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-5.3	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-6.2	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-6.2	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-6.3	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-6.3	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-6.3	GCMSL	Amy Min Yang	02/04/11 11:04	Unload from Instrument
M97395-6.3	Amy Min Yang	VOC Ref #5	02/04/11 11:04	Return to Storage
M97395-7.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-7.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-7.4	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-7.4	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-7.4	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-7.4	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-8.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-8.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-8.3	VOC Ref #5	Jugal Patel	02/07/11 16:43	Retrieve from Storage
M97395-8.3	Jugal Patel	GCMSN	02/07/11 16:43	Load on Instrument
M97395-8.3	GCMSN	Jugal Patel	02/08/11 10:10	Unload from Instrument
M97395-8.3	Jugal Patel	VOC Ref #5	02/08/11 10:11	Return to Storage
M97395-8.4	VOC Ref #5	Jugal Patel	02/08/11 12:04	Retrieve from Storage
M97395-8.4	Jugal Patel	GCMSN	02/08/11 12:04	Load on Instrument
M97395-8.4	GCMSN	Jugal Patel	02/09/11 10:54	Unload from Instrument
M97395-8.4	Jugal Patel	VOC Ref #5	02/09/11 10:54	Return to Storage
M97395-8.5	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage

# Accutest Internal Chain of Custody

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/26/11

4.3  
**4**

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97395-8.5	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-8.5	GCMSL	Amy Min Yang	02/04/11 11:04	Unload from Instrument
M97395-8.5	Amy Min Yang	VOC Ref #5	02/04/11 11:04	Return to Storage
M97395-9.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-9.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-9.3	VOC Ref #5	Jugal Patel	02/09/11 10:54	Retrieve from Storage
M97395-9.3	Jugal Patel	GCMSN	02/09/11 10:54	Load on Instrument
M97395-9.3	GCMSN	Jugal Patel	02/09/11 10:55	Unload from Instrument
M97395-9.3	Jugal Patel	VOC Ref #5	02/09/11 10:55	Return to Storage
M97395-9.4	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-9.4	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-9.4	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-9.4	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-10.1	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-10.1	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-10.3	VOC Ref #5	Jugal Patel	02/09/11 10:54	Retrieve from Storage
M97395-10.3	Jugal Patel	GCMSN	02/09/11 10:54	Load on Instrument
M97395-10.3	GCMSN	Jugal Patel	02/09/11 10:55	Unload from Instrument
M97395-10.3	Jugal Patel	VOC Ref #5	02/09/11 10:55	Return to Storage
M97395-10.4	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-10.4	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-10.4	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-10.4	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage
M97395-11.2	Walk In Ref #22	Mahmoud Afzali	01/27/11 11:42	Retrieve from Storage
M97395-11.2	Mahmoud Afzali		01/28/11 11:13	Depleted
M97395-11.3	VOC Ref #5	Jugal Patel	02/09/11 10:54	Retrieve from Storage
M97395-11.3	Jugal Patel	GCMSN	02/09/11 10:54	Load on Instrument
M97395-11.3	GCMSN	Jugal Patel	02/09/11 10:55	Unload from Instrument
M97395-11.3	Jugal Patel	VOC Ref #5	02/09/11 10:55	Return to Storage
M97395-11.4	VOC Ref #5	Amy Min Yang	02/03/11 10:11	Retrieve from Storage
M97395-11.4	Amy Min Yang	GCMSL	02/03/11 10:11	Load on Instrument
M97395-11.4	GCMSL	Amy Min Yang	02/08/11 11:40	Unload from Instrument
M97395-11.4	Amy Min Yang	VOC Ref #5	02/08/11 11:40	Return to Storage

## GC/MS Volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

## Method Blank Summary

Page 1 of 2

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1644-MB	L49356.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	12.0	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.1  
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# Method Blank Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1644-MB	L49356.D	1	02/03/11	AMY	n/a	n/a	MSL1644

5.1.1  
**5**

The QC reported here applies to the following samples: Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	103%	70-130%
2037-26-5	Toluene-D8	100%	70-130%
460-00-4	4-Bromofluorobenzene	96%	70-130%

# Method Blank Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4155-MB	G103071.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.2  
5

# Method Blank Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4155-MB	G103071.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	99%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	100%	70-130%

5.1.2  
5

# Method Blank Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1863-MB	N49335.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
106-93-4	1,2-Dibromoethane	ND	2.0	0.76	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.3  
5



## Method Blank Summary

Page 2 of 3

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1863-MB	N49335.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Result	RL	MDL	Units	Q
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
591-78-6	2-Hexanone	ND	5.0	2.5	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	5.0	1.3	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Limits	
1868-53-7	Dibromofluoromethane	101%	70-130%
2037-26-5	Toluene-D8	104%	70-130%
460-00-4	4-Bromofluorobenzene	105%	70-130%

5.1.3

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# Method Blank Summary

Job Number: M97395

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1863-MB	N49335.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method:

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Tentatively Identified Compounds	R.T.	Est. Conc.	Units	Q
	Total TIC, Volatile		0	ug/l	

5.1.3  
5

# Blank Spike Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4155-BS	G103069.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	56.3	113	70-130
71-43-2	Benzene	50	46.4	93	70-130
108-86-1	Bromobenzene	50	47.9	96	70-130
74-97-5	Bromochloromethane	50	45.9	92	70-130
75-27-4	Bromodichloromethane	50	47.2	94	70-130
75-25-2	Bromoform	50	50.8	102	70-130
74-83-9	Bromomethane	50	42.0	84	70-130
78-93-3	2-Butanone (MEK)	50	49.0	98	70-130
104-51-8	n-Butylbenzene	50	50.5	101	70-130
135-98-8	sec-Butylbenzene	50	48.8	98	70-130
98-06-6	tert-Butylbenzene	50	46.8	94	70-130
75-15-0	Carbon disulfide	50	47.5	95	70-130
56-23-5	Carbon tetrachloride	50	47.6	95	70-130
108-90-7	Chlorobenzene	50	47.2	94	70-130
75-00-3	Chloroethane	50	43.1	86	70-130
67-66-3	Chloroform	50	46.6	93	70-130
74-87-3	Chloromethane	50	45.5	91	70-130
95-49-8	o-Chlorotoluene	50	46.1	92	70-130
106-43-4	p-Chlorotoluene	50	48.1	96	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	47.5	95	70-130
124-48-1	Dibromochloromethane	50	49.6	99	70-130
106-93-4	1,2-Dibromoethane	50	46.9	94	70-130
95-50-1	1,2-Dichlorobenzene	50	48.7	97	70-130
541-73-1	1,3-Dichlorobenzene	50	48.2	96	70-130
106-46-7	1,4-Dichlorobenzene	50	48.4	97	70-130
75-71-8	Dichlorodifluoromethane	50	33.7	67* a	70-130
75-34-3	1,1-Dichloroethane	50	46.5	93	70-130
107-06-2	1,2-Dichloroethane	50	47.8	96	70-130
75-35-4	1,1-Dichloroethene	50	50.0	100	70-130
156-59-2	cis-1,2-Dichloroethene	50	47.9	96	70-130
156-60-5	trans-1,2-Dichloroethene	50	48.9	98	70-130
78-87-5	1,2-Dichloropropane	50	46.4	93	70-130
142-28-9	1,3-Dichloropropane	50	47.5	95	70-130
594-20-7	2,2-Dichloropropane	50	46.7	93	70-130
563-58-6	1,1-Dichloropropene	50	48.8	98	70-130
10061-01-5	cis-1,3-Dichloropropene	50	50.0	100	70-130

5.2.1  
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# Blank Spike Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4155-BS	G103069.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
10061-02-6	trans-1,3-Dichloropropene	50	53.8	108	70-130
100-41-4	Ethylbenzene	50	46.6	93	70-130
87-68-3	Hexachlorobutadiene	50	52.8	106	70-130
591-78-6	2-Hexanone	50	46.2	92	70-130
98-82-8	Isopropylbenzene	50	53.7	107	70-130
99-87-6	p-Isopropyltoluene	50	49.5	99	70-130
1634-04-4	Methyl Tert Butyl Ether	50	46.6	93	70-130
108-10-1	4-Methyl-2-pentanone (MIBK)	50	47.9	96	70-130
74-95-3	Methylene bromide	50	47.8	96	70-130
75-09-2	Methylene chloride	50	45.9	92	70-130
103-65-1	n-Propylbenzene	50	47.0	94	70-130
100-42-5	Styrene	50	48.0	96	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	47.0	94	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	47.7	95	70-130
127-18-4	Tetrachloroethene	50	47.9	96	70-130
108-88-3	Toluene	50	48.1	96	70-130
87-61-6	1,2,3-Trichlorobenzene	50	50.4	101	70-130
120-82-1	1,2,4-Trichlorobenzene	50	50.8	102	70-130
71-55-6	1,1,1-Trichloroethane	50	45.8	92	70-130
79-00-5	1,1,2-Trichloroethane	50	46.1	92	70-130
79-01-6	Trichloroethene	50	46.1	92	70-130
75-69-4	Trichlorofluoromethane	50	45.1	90	70-130
96-18-4	1,2,3-Trichloropropane	50	48.7	97	70-130
95-63-6	1,2,4-Trimethylbenzene	50	47.5	95	70-130
108-67-8	1,3,5-Trimethylbenzene	50	47.4	95	70-130
108-05-4	Vinyl Acetate	50	37.7	75	70-130
75-01-4	Vinyl chloride	50	42.0	84	70-130
	m,p-Xylene	100	93.5	94	70-130
95-47-6	o-Xylene	50	47.4	95	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	100%	70-130%
2037-26-5	Toluene-D8	99%	70-130%
460-00-4	4-Bromofluorobenzene	95%	70-130%

5.2.1  
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# Blank Spike Summary

Job Number: M97395  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSG4155-BS	G103069.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

(a) Outside control limits. Blank Spike meets program technical requirements.

5.2.1  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1644-BS	L49353.D	1	02/03/11	AMY	n/a	n/a	MSL1644
MSL1644-BSD	L49354.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	46.1	92	42.9	86	7	70-130/25
71-43-2	Benzene	50	50.3	101	48.8	98	3	70-130/25
108-86-1	Bromobenzene	50	49.3	99	49.8	100	1	70-130/25
74-97-5	Bromochloromethane	50	49.7	99	49.9	100	0	70-130/25
75-27-4	Bromodichloromethane	50	55.2	110	55.3	111	0	70-130/25
75-25-2	Bromoform	50	43.7	87	44.2	88	1	70-130/25
74-83-9	Bromomethane	50	40.6	81	41.3	83	2	70-130/25
78-93-3	2-Butanone (MEK)	50	66.2	132* a	58.7	117	12	70-130/25
104-51-8	n-Butylbenzene	50	55.6	111	56.4	113	1	70-130/25
135-98-8	sec-Butylbenzene	50	54.1	108	54.4	109	1	70-130/25
98-06-6	tert-Butylbenzene	50	55.0	110	55.6	111	1	70-130/25
75-15-0	Carbon disulfide	50	60.0	120	57.3	115	5	70-130/25
56-23-5	Carbon tetrachloride	50	56.2	112	54.8	110	3	70-130/25
108-90-7	Chlorobenzene	50	48.9	98	47.9	96	2	70-130/25
75-00-3	Chloroethane	50	44.6	89	41.4	83	7	70-130/25
67-66-3	Chloroform	50	55.1	110	53.4	107	3	70-130/25
74-87-3	Chloromethane	50	58.1	116	56.4	113	3	70-130/25
95-49-8	o-Chlorotoluene	50	49.7	99	50.1	100	1	70-130/25
106-43-4	p-Chlorotoluene	50	52.7	105	53.5	107	2	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	60.0	120	62.0	124	3	70-130/25
124-48-1	Dibromochloromethane	50	51.1	102	49.8	100	3	70-130/25
106-93-4	1,2-Dibromoethane	50	50.1	100	50.2	100	0	70-130/25
95-50-1	1,2-Dichlorobenzene	50	52.5	105	52.5	105	0	70-130/25
541-73-1	1,3-Dichlorobenzene	50	52.8	106	52.8	106	0	70-130/25
106-46-7	1,4-Dichlorobenzene	50	48.6	97	48.8	98	0	70-130/25
75-71-8	Dichlorodifluoromethane	50	59.7	119	56.4	113	6	70-130/25
75-34-3	1,1-Dichloroethane	50	56.4	113	55.7	111	1	70-130/25
107-06-2	1,2-Dichloroethane	50	55.3	111	53.8	108	3	70-130/25
75-35-4	1,1-Dichloroethene	50	51.4	103	51.3	103	0	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	51.9	104	51.9	104	0	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	51.9	104	50.6	101	3	70-130/25
78-87-5	1,2-Dichloropropane	50	55.6	111	55.1	110	1	70-130/25
142-28-9	1,3-Dichloropropane	50	51.3	103	48.9	98	5	70-130/25
594-20-7	2,2-Dichloropropane	50	54.8	110	51.9	104	5	70-130/25
563-58-6	1,1-Dichloropropene	50	59.0	118	56.9	114	4	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	49.0	98	49.3	99	1	70-130/25

5.3.1  
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# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1644-BS	L49353.D	1	02/03/11	AMY	n/a	n/a	MSL1644
MSL1644-BSD	L49354.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	50	47.9	96	47.9	96	0	70-130/25
100-41-4	Ethylbenzene	50	47.4	95	44.9	90	5	70-130/25
87-68-3	Hexachlorobutadiene	50	59.7	119	60.3	121	1	70-130/25
591-78-6	2-Hexanone	50	62.6	125	64.3	129	3	70-130/25
98-82-8	Isopropylbenzene	50	59.8	120	60.1	120	1	70-130/25
99-87-6	p-Isopropyltoluene	50	53.5	107	53.8	108	1	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	40.1	80	39.9	80	1	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	71.1	142* a	73.0	146* a	3	70-130/25
74-95-3	Methylene bromide	50	43.7	87	43.8	88	0	70-130/25
75-09-2	Methylene chloride	50	48.4	97	47.5	95	2	70-130/25
103-65-1	n-Propylbenzene	50	52.3	105	52.2	104	0	70-130/25
100-42-5	Styrene	50	50.2	100	49.0	98	2	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	50.8	102	50.6	101	0	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	53.0	106	54.5	109	3	70-130/25
127-18-4	Tetrachloroethene	50	52.9	106	51.6	103	2	70-130/25
108-88-3	Toluene	50	53.5	107	51.9	104	3	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	53.7	107	56.1	112	4	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	55.6	111	57.8	116	4	70-130/25
71-55-6	1,1,1-Trichloroethane	50	60.3	121	58.4	117	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	53.9	108	54.1	108	0	70-130/25
79-01-6	Trichloroethene	50	53.3	107	52.0	104	2	70-130/25
75-69-4	Trichlorofluoromethane	50	45.6	91	43.5	87	5	70-130/25
96-18-4	1,2,3-Trichloropropane	50	48.3	97	50.3	101	4	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	49.7	99	50.6	101	2	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	51.7	103	52.1	104	1	70-130/25
108-05-4	Vinyl Acetate	50	49.4	99	48.4	97	2	70-130/25
75-01-4	Vinyl chloride	50	47.3	95	45.4	91	4	70-130/25
	m,p-Xylene	100	91.9	92	87.5	88	5	70-130/25
95-47-6	o-Xylene	50	47.4	95	45.2	90	5	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	96%	98%	70-130%
2037-26-5	Toluene-D8	97%	100%	70-130%
460-00-4	4-Bromofluorobenzene	90%	95%	70-130%

5.3.1  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97395

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSL1644-BS	L49353.D	1	02/03/11	AMY	n/a	n/a	MSL1644
MSL1644-BSD	L49354.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

(a) Outside control limits. Associated samples are non-detect for this compound.

5.3.1  
5



# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1863-BS	N49332.D	1	02/08/11	JP	n/a	n/a	MSN1863
MSN1863-BSD	N49333.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	61.4	123	60.6	121	1	70-130/25
71-43-2	Benzene	50	52.7	105	51.2	102	3	70-130/25
108-86-1	Bromobenzene	50	52.6	105	52.9	106	1	70-130/25
74-97-5	Bromochloromethane	50	50.8	102	48.8	98	4	70-130/25
75-27-4	Bromodichloromethane	50	55.7	111	53.7	107	4	70-130/25
75-25-2	Bromoform	50	46.2	92	47.6	95	3	70-130/25
74-83-9	Bromomethane	50	46.5	93	45.0	90	3	70-130/25
78-93-3	2-Butanone (MEK)	50	55.0	110	58.0	116	5	70-130/25
104-51-8	n-Butylbenzene	50	57.4	115	55.3	111	4	70-130/25
135-98-8	sec-Butylbenzene	50	54.9	110	53.2	106	3	70-130/25
98-06-6	tert-Butylbenzene	50	54.3	109	52.3	105	4	70-130/25
75-15-0	Carbon disulfide	50	50.3	101	48.9	98	3	70-130/25
56-23-5	Carbon tetrachloride	50	57.3	115	54.3	109	5	70-130/25
108-90-7	Chlorobenzene	50	51.0	102	51.2	102	0	70-130/25
75-00-3	Chloroethane	50	49.5	99	46.4	93	6	70-130/25
67-66-3	Chloroform	50	51.7	103	50.3	101	3	70-130/25
74-87-3	Chloromethane	50	45.4	91	43.3	87	5	70-130/25
95-49-8	o-Chlorotoluene	50	52.1	104	51.2	102	2	70-130/25
106-43-4	p-Chlorotoluene	50	55.4	111	53.9	108	3	70-130/25
96-12-8	1,2-Dibromo-3-chloropropane	50	49.8	100	51.5	103	3	70-130/25
124-48-1	Dibromochloromethane	50	50.0	100	50.5	101	1	70-130/25
106-93-4	1,2-Dibromoethane	50	53.1	106	55.2	110	4	70-130/25
95-50-1	1,2-Dichlorobenzene	50	51.7	103	53.0	106	2	70-130/25
541-73-1	1,3-Dichlorobenzene	50	53.9	108	52.8	106	2	70-130/25
106-46-7	1,4-Dichlorobenzene	50	50.6	101	50.9	102	1	70-130/25
75-71-8	Dichlorodifluoromethane	50	40.3	81	38.5	77	5	70-130/25
75-34-3	1,1-Dichloroethane	50	50.9	102	49.4	99	3	70-130/25
107-06-2	1,2-Dichloroethane	50	52.2	104	50.8	102	3	70-130/25
75-35-4	1,1-Dichloroethene	50	51.4	103	49.5	99	4	70-130/25
156-59-2	cis-1,2-Dichloroethene	50	50.1	100	49.9	100	0	70-130/25
156-60-5	trans-1,2-Dichloroethene	50	50.6	101	49.1	98	3	70-130/25
78-87-5	1,2-Dichloropropane	50	52.3	105	51.0	102	3	70-130/25
142-28-9	1,3-Dichloropropane	50	51.6	103	52.1	104	1	70-130/25
594-20-7	2,2-Dichloropropane	50	61.3	123	57.0	114	7	70-130/25
563-58-6	1,1-Dichloropropene	50	54.9	110	51.6	103	6	70-130/25
10061-01-5	cis-1,3-Dichloropropene	50	52.8	106	51.3	103	3	70-130/25

5.3.2  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSN1863-BS	N49332.D	1	02/08/11	JP	n/a	n/a	MSN1863
MSN1863-BSD	N49333.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	50	55.6	111	54.7	109	2	70-130/25
100-41-4	Ethylbenzene	50	53.3	107	52.3	105	2	70-130/25
87-68-3	Hexachlorobutadiene	50	56.6	113	53.1	106	6	70-130/25
591-78-6	2-Hexanone	50	52.3	105	54.5	109	4	70-130/25
98-82-8	Isopropylbenzene	50	62.3	125	60.9	122	2	70-130/25
99-87-6	p-Isopropyltoluene	50	54.2	108	52.8	106	3	70-130/25
1634-04-4	Methyl Tert Butyl Ether	50	51.4	103	51.5	103	0	70-130/25
108-10-1	4-Methyl-2-pentanone (MIBK)	50	51.0	102	52.7	105	3	70-130/25
74-95-3	Methylene bromide	50	53.9	108	52.1	104	3	70-130/25
75-09-2	Methylene chloride	50	47.1	94	44.9	90	5	70-130/25
103-65-1	n-Propylbenzene	50	55.6	111	54.3	109	2	70-130/25
100-42-5	Styrene	50	54.0	108	54.6	109	1	70-130/25
630-20-6	1,1,1,2-Tetrachloroethane	50	52.9	106	54.0	108	2	70-130/25
79-34-5	1,1,2,2-Tetrachloroethane	50	51.4	103	53.5	107	4	70-130/25
127-18-4	Tetrachloroethene	50	53.0	106	52.0	104	2	70-130/25
108-88-3	Toluene	50	52.1	104	50.3	101	4	70-130/25
87-61-6	1,2,3-Trichlorobenzene	50	56.3	113	56.7	113	1	70-130/25
120-82-1	1,2,4-Trichlorobenzene	50	56.5	113	55.9	112	1	70-130/25
71-55-6	1,1,1-Trichloroethane	50	55.0	110	53.2	106	3	70-130/25
79-00-5	1,1,2-Trichloroethane	50	51.5	103	52.1	104	1	70-130/25
79-01-6	Trichloroethene	50	51.3	103	49.1	98	4	70-130/25
75-69-4	Trichlorofluoromethane	50	47.5	95	45.2	90	5	70-130/25
96-18-4	1,2,3-Trichloropropane	50	52.9	106	54.0	108	2	70-130/25
95-63-6	1,2,4-Trimethylbenzene	50	53.1	106	51.7	103	3	70-130/25
108-67-8	1,3,5-Trimethylbenzene	50	54.1	108	52.7	105	3	70-130/25
108-05-4	Vinyl Acetate	50	45.9	92	45.2	90	2	70-130/25
75-01-4	Vinyl chloride	50	46.3	93	43.7	87	6	70-130/25
	m,p-Xylene	100	108	108	106	106	2	70-130/25
95-47-6	o-Xylene	50	53.9	108	53.1	106	1	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	104%	101%	70-130%
2037-26-5	Toluene-D8	106%	105%	70-130%
460-00-4	4-Bromofluorobenzene	102%	101%	70-130%

5.3.2  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97395-2MS	L49376.D	1	02/03/11	AMY	n/a	n/a	MSL1644
M97395-2MSD	L49377.D	1	02/03/11	AMY	n/a	n/a	MSL1644
M97395-2	L49366.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

CAS No.	Compound	M97395-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	38.0	76	37.0	74	3	70-130/30
71-43-2	Benzene	ND	50	383	766* a	228	456* a	51* b	70-130/30
108-86-1	Bromobenzene	ND	50	48.3	97	50.7	101	5	70-130/30
74-97-5	Bromochloromethane	ND	50	48.4	97	47.7	95	1	70-130/30
75-27-4	Bromodichloromethane	ND	50	49.3	99	48.9	98	1	70-130/30
75-25-2	Bromoform	ND	50	45.0	90	47.3	95	5	70-130/30
74-83-9	Bromomethane	ND	50	35.6	71	45.3	91	24	70-130/30
78-93-3	2-Butanone (MEK)	ND	50	47.5	95	47.9	96	1	70-130/30
104-51-8	n-Butylbenzene	ND	50	41.5	83	44.6	89	7	70-130/30
135-98-8	sec-Butylbenzene	ND	50	44.1	88	46.2	92	5	70-130/30
98-06-6	tert-Butylbenzene	ND	50	45.3	91	47.1	94	4	70-130/30
75-15-0	Carbon disulfide	ND	50	47.7	95	45.5	91	5	70-130/30
56-23-5	Carbon tetrachloride	ND	50	50.4	101	48.3	97	4	70-130/30
108-90-7	Chlorobenzene	ND	50	51.9	104	52.8	106	2	70-130/30
75-00-3	Chloroethane	ND	50	43.5	87	41.0	82	6	70-130/30
67-66-3	Chloroform	ND	50	45.1	90	44.3	89	2	70-130/30
74-87-3	Chloromethane	ND	50	46.6	93	46.1	92	1	70-130/30
95-49-8	o-Chlorotoluene	ND	50	42.4	85	43.5	87	3	70-130/30
106-43-4	p-Chlorotoluene	ND	50	45.0	90	46.1	92	2	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	44.5	89	47.3	95	6	70-130/30
124-48-1	Dibromochloromethane	ND	50	52.4	105	53.9	108	3	70-130/30
106-93-4	1,2-Dibromoethane	ND	50	53.1	106	54.6	109	3	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	49.8	100	51.7	103	4	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	48.0	96	51.9	104	8	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	45.4	91	47.8	96	5	70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	43.1	86	41.4	83	4	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	43.8	88	41.3	83	6	70-130/30
107-06-2	1,2-Dichloroethane	ND	50	46.9	94	45.7	91	3	70-130/30
75-35-4	1,1-Dichloroethene	ND	50	48.9	98	45.7	91	7	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	46.7	93	45.2	90	3	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	44.2	88	44.4	89	0	70-130/30
78-87-5	1,2-Dichloropropane	ND	50	46.2	92	44.4	89	4	70-130/30
142-28-9	1,3-Dichloropropane	ND	50	47.3	95	48.2	96	2	70-130/30
594-20-7	2,2-Dichloropropane	ND	50	41.3	83	35.8	72	14	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	51.2	102	48.8	98	5	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	40.9	82	41.6	83	2	70-130/30

5.4.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97395-2MS	L49376.D	1	02/03/11	AMY	n/a	n/a	MSL1644
M97395-2MSD	L49377.D	1	02/03/11	AMY	n/a	n/a	MSL1644
M97395-2	L49366.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

CAS No.	Compound	M97395-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND	50	38.4	77	39.4	79	3	70-130/30
100-41-4	Ethylbenzene	ND	50	46.5	93	46.8	94	1	70-130/30
87-68-3	Hexachlorobutadiene	ND	50	49.3	99	55.7	111	12	70-130/30
591-78-6	2-Hexanone	ND	50	47.4	95	49.5	99	4	70-130/30
98-82-8	Isopropylbenzene	ND	50	52.1	104	53.7	107	3	70-130/30
99-87-6	p-Isopropyltoluene	ND	50	45.4	91	48.8	98	7	70-130/30
1634-04-4	Methyl Tert Butyl Ether	ND	50	34.3	69* c	33.7	67* c	2	70-130/30
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	51.1	102	52.4	105	3	70-130/30
74-95-3	Methylene bromide	ND	50	41.8	84	40.3	81	4	70-130/30
75-09-2	Methylene chloride	ND	50	43.8	88	44.2	88	1	70-130/30
103-65-1	n-Propylbenzene	ND	50	42.8	86	44.2	88	3	70-130/30
100-42-5	Styrene	ND	50	51.4	103	54.4	109	6	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	52.7	105	53.6	107	2	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	43.5	87	44.4	89	2	70-130/30
127-18-4	Tetrachloroethene	ND	50	59.2	118	59.5	119	1	70-130/30
108-88-3	Toluene	ND	50	51.1	102	50.1	100	2	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND	50	48.2	96	54.6	109	12	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND	50	51.8	104	56.8	114	9	70-130/30
71-55-6	1,1,1-Trichloroethane	ND	50	49.5	99	46.6	93	6	70-130/30
79-00-5	1,1,2-Trichloroethane	ND	50	51.2	102	51.0	102	0	70-130/30
79-01-6	Trichloroethene	ND	50	49.2	98	48.4	97	2	70-130/30
75-69-4	Trichlorofluoromethane	ND	50	38.3	77	37.9	76	1	70-130/30
96-18-4	1,2,3-Trichloropropane	ND	50	38.1	76	39.4	79	3	70-130/30
95-63-6	1,2,4-Trimethylbenzene	ND	50	44.2	88	45.7	91	3	70-130/30
108-67-8	1,3,5-Trimethylbenzene	ND	50	45.1	90	46.4	93	3	70-130/30
108-05-4	Vinyl Acetate	ND	50	35.3	71	34.6	69* c	2	70-130/30
75-01-4	Vinyl chloride	ND	50	42.5	85	40.6	81	5	70-130/30
	m,p-Xylene	ND	100	95.9	96	96.0	96	0	70-130/30
95-47-6	o-Xylene	ND	50	50.5	101	51.5	103	2	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97395-2	Limits
1868-53-7	Dibromofluoromethane	89%	85%	102%	70-130%
2037-26-5	Toluene-D8	99%	97%	100%	70-130%
460-00-4	4-Bromofluorobenzene	86%	84%	91%	70-130%

5.4.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97395-2MS	L49376.D	1	02/03/11	AMY	n/a	n/a	MSL1644
M97395-2MSD	L49377.D	1	02/03/11	AMY	n/a	n/a	MSL1644
M97395-2	L49366.D	1	02/03/11	AMY	n/a	n/a	MSL1644

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-1, M97395-2, M97395-3, M97395-4, M97395-5, M97395-7, M97395-9, M97395-10, M97395-11

- (a) Outside control limits due to possible sample carryover.
- (b) High RPD due to possible matrix interference and/or sample non-homogeneity.
- (c) Outside control limits due to possible matrix interference. Refer to Blank Spike.

5.4.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97501-3MS	G103081.D	1	02/07/11	EL	n/a	n/a	MSG4155
M97501-3MSD	G103082.D	1	02/07/11	EL	n/a	n/a	MSG4155
M97501-3	G103079.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

CAS No.	Compound	M97501-3 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	50	51.0	102	53.3	107	4	70-130/30
71-43-2	Benzene	ND	50	52.0	104	50.9	102	2	70-130/30
108-86-1	Bromobenzene	ND	50	51.2	102	51.9	104	1	70-130/30
74-97-5	Bromochloromethane	ND	50	50.4	101	50.9	102	1	70-130/30
75-27-4	Bromodichloromethane	ND	50	51.8	104	50.7	101	2	70-130/30
75-25-2	Bromoform	ND	50	50.1	100	50.8	102	1	70-130/30
74-83-9	Bromomethane	ND	50	46.4	93	46.8	94	1	70-130/30
78-93-3	2-Butanone (MEK)	ND	50	50.9	102	51.0	102	0	70-130/30
104-51-8	n-Butylbenzene	ND	50	53.4	107	53.6	107	0	70-130/30
135-98-8	sec-Butylbenzene	ND	50	52.5	105	53.0	106	1	70-130/30
98-06-6	tert-Butylbenzene	ND	50	50.0	100	51.4	103	3	70-130/30
75-15-0	Carbon disulfide	ND	50	43.1	86	43.8	88	2	70-130/30
56-23-5	Carbon tetrachloride	ND	50	50.7	101	51.1	102	1	70-130/30
108-90-7	Chlorobenzene	ND	50	51.1	102	50.0	100	2	70-130/30
75-00-3	Chloroethane	ND	50	48.0	96	48.3	97	1	70-130/30
67-66-3	Chloroform	ND	50	52.0	104	52.1	104	0	70-130/30
74-87-3	Chloromethane	ND	50	51.5	103	52.0	104	1	70-130/30
95-49-8	o-Chlorotoluene	ND	50	50.4	101	50.6	101	0	70-130/30
106-43-4	p-Chlorotoluene	ND	50	51.7	103	52.1	104	1	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND	50	51.5	103	52.6	105	2	70-130/30
124-48-1	Dibromochloromethane	ND	50	50.7	101	50.0	100	1	70-130/30
106-93-4	1,2-Dibromoethane	ND	50	50.3	101	50.6	101	1	70-130/30
95-50-1	1,2-Dichlorobenzene	ND	50	52.1	104	52.5	105	1	70-130/30
541-73-1	1,3-Dichlorobenzene	ND	50	51.6	103	51.9	104	1	70-130/30
106-46-7	1,4-Dichlorobenzene	ND	50	51.6	103	51.8	104	0	70-130/30
75-71-8	Dichlorodifluoromethane	ND	50	38.7	77	39.3	79	2	70-130/30
75-34-3	1,1-Dichloroethane	ND	50	51.5	103	52.3	105	2	70-130/30
107-06-2	1,2-Dichloroethane	ND	50	53.0	106	53.1	106	0	70-130/30
75-35-4	1,1-Dichloroethene	ND	50	57.1	114	56.9	114	0	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND	50	53.0	106	53.6	107	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND	50	54.4	109	54.9	110	1	70-130/30
78-87-5	1,2-Dichloropropane	ND	50	52.2	104	51.1	102	2	70-130/30
142-28-9	1,3-Dichloropropane	ND	50	51.0	102	51.2	102	0	70-130/30
594-20-7	2,2-Dichloropropane	ND	50	50.7	101	50.0	100	1	70-130/30
563-58-6	1,1-Dichloropropene	ND	50	54.1	108	52.9	106	2	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND	50	52.4	105	51.8	104	1	70-130/30

5.4.2  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97501-3MS	G103081.D	1	02/07/11	EL	n/a	n/a	MSG4155
M97501-3MSD	G103082.D	1	02/07/11	EL	n/a	n/a	MSG4155
M97501-3	G103079.D	1	02/07/11	EL	n/a	n/a	MSG4155

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-6

CAS No.	Compound	M97501-3 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND	50	56.7	113	55.9	112	1	70-130/30	
100-41-4	Ethylbenzene	ND	50	50.6	101	50.4	101	0	70-130/30	
87-68-3	Hexachlorobutadiene	ND	50	53.2	106	54.0	108	1	70-130/30	
591-78-6	2-Hexanone	ND	50	47.2	94	49.0	98	4	70-130/30	
98-82-8	Isopropylbenzene	ND	50	58.4	117	59.2	118	1	70-130/30	
99-87-6	p-Isopropyltoluene	ND	50	53.4	107	53.1	106	1	70-130/30	
1634-04-4	Methyl Tert Butyl Ether	ND	50	50.6	101	51.0	102	1	70-130/30	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	50	52.2	104	52.8	106	1	70-130/30	
74-95-3	Methylene bromide	ND	50	52.3	105	52.4	105	0	70-130/30	
75-09-2	Methylene chloride	ND	50	51.4	103	51.6	103	0	70-130/30	
103-65-1	n-Propylbenzene	ND	50	51.2	102	51.8	104	1	70-130/30	
100-42-5	Styrene	ND	50	51.4	103	50.9	102	1	70-130/30	
630-20-6	1,1,1,2-Tetrachloroethane	ND	50	50.0	100	50.2	100	0	70-130/30	
79-34-5	1,1,2,2-Tetrachloroethane	ND	50	51.7	103	52.4	105	1	70-130/30	
127-18-4	Tetrachloroethene	ND	50	52.3	105	51.1	102	2	70-130/30	
108-88-3	Toluene	ND	50	52.6	105	52.1	104	1	70-130/30	
87-61-6	1,2,3-Trichlorobenzene	ND	50	50.8	102	52.1	104	3	70-130/30	
120-82-1	1,2,4-Trichlorobenzene	ND	50	50.6	101	51.5	103	2	70-130/30	
71-55-6	1,1,1-Trichloroethane	ND	50	50.9	102	51.9	104	2	70-130/30	
79-00-5	1,1,2-Trichloroethane	ND	50	51.4	103	51.7	103	1	70-130/30	
79-01-6	Trichloroethene	ND	50	51.2	102	50.5	101	1	70-130/30	
75-69-4	Trichlorofluoromethane	ND	50	49.9	100	50.6	101	1	70-130/30	
96-18-4	1,2,3-Trichloropropane	ND	50	49.4	99	50.9	102	3	70-130/30	
95-63-6	1,2,4-Trimethylbenzene	ND	50	51.4	103	51.5	103	0	70-130/30	
108-67-8	1,3,5-Trimethylbenzene	ND	50	50.4	101	50.3	101	0	70-130/30	
108-05-4	Vinyl Acetate	ND	50	41.2	82	41.4	83	0	70-130/30	
75-01-4	Vinyl chloride	ND	50	48.7	97	49.5	99	2	70-130/30	
	m,p-Xylene	ND	100	101	101	100	100	1	70-130/30	
95-47-6	o-Xylene	ND	50	51.1	102	50.2	100	2	70-130/30	

CAS No.	Surrogate Recoveries	MS	MSD	M97501-3	Limits
1868-53-7	Dibromofluoromethane	101%	102%	100%	70-130%
2037-26-5	Toluene-D8	101%	100%	101%	70-130%
460-00-4	4-Bromofluorobenzene	94%	96%	100%	70-130%

5.4.2  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97571-1MS	N49351.D	5	02/08/11	JP	n/a	n/a	MSN1863
M97571-1MSD	N49352.D	5	02/08/11	JP	n/a	n/a	MSN1863
M97571-1	N49350.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	M97571-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND	250	270	108	240	96	12	70-130/30	
71-43-2	Benzene	ND	250	276	110	247	99	11	70-130/30	
108-86-1	Bromobenzene	ND	250	266	106	251	100	6	70-130/30	
74-97-5	Bromochloromethane	ND	250	261	104	246	98	6	70-130/30	
75-27-4	Bromodichloromethane	ND	250	301	120	265	106	13	70-130/30	
75-25-2	Bromoform	ND	250	241	96	225	90	7	70-130/30	
74-83-9	Bromomethane	ND	250	216	86	212	85	2	70-130/30	
78-93-3	2-Butanone (MEK)	ND	250	267	107	242	97	10	70-130/30	
104-51-8	n-Butylbenzene	ND	250	277	111	252	101	9	70-130/30	
135-98-8	sec-Butylbenzene	ND	250	267	107	246	98	8	70-130/30	
98-06-6	tert-Butylbenzene	ND	250	272	109	249	100	9	70-130/30	
75-15-0	Carbon disulfide	ND	250	261	104	233	93	11	70-130/30	
56-23-5	Carbon tetrachloride	ND	250	302	121	264	106	13	70-130/30	
108-90-7	Chlorobenzene	ND	250	266	106	241	96	10	70-130/30	
75-00-3	Chloroethane	ND	250	255	102	238	95	7	70-130/30	
67-66-3	Chloroform	ND	250	276	110	249	100	10	70-130/30	
74-87-3	Chloromethane	ND	250	227	91	215	86	5	70-130/30	
95-49-8	o-Chlorotoluene	ND	250	264	106	242	97	9	70-130/30	
106-43-4	p-Chlorotoluene	ND	250	281	112	259	104	8	70-130/30	
96-12-8	1,2-Dibromo-3-chloropropane	ND	250	262	105	232	93	12	70-130/30	
124-48-1	Dibromochloromethane	ND	250	260	104	240	96	8	70-130/30	
106-93-4	1,2-Dibromoethane	ND	250	281	112	254	102	10	70-130/30	
95-50-1	1,2-Dichlorobenzene	ND	250	267	107	246	98	8	70-130/30	
541-73-1	1,3-Dichlorobenzene	ND	250	270	108	249	100	8	70-130/30	
106-46-7	1,4-Dichlorobenzene	ND	250	255	102	241	96	6	70-130/30	
75-71-8	Dichlorodifluoromethane	ND	250	215	86	188	75	13	70-130/30	
75-34-3	1,1-Dichloroethane	ND	250	271	108	243	97	11	70-130/30	
107-06-2	1,2-Dichloroethane	ND	250	289	116	259	104	11	70-130/30	
75-35-4	1,1-Dichloroethene	ND	250	258	103	234	94	10	70-130/30	
156-59-2	cis-1,2-Dichloroethene	ND	250	266	106	249	100	7	70-130/30	
156-60-5	trans-1,2-Dichloroethene	ND	250	264	106	240	96	10	70-130/30	
78-87-5	1,2-Dichloropropane	ND	250	273	109	251	100	8	70-130/30	
142-28-9	1,3-Dichloropropane	ND	250	275	110	251	100	9	70-130/30	
594-20-7	2,2-Dichloropropane	ND	250	281	112	247	99	13	70-130/30	
563-58-6	1,1-Dichloropropene	ND	250	281	112	248	99	12	70-130/30	
10061-01-5	cis-1,3-Dichloropropene	ND	250	268	107	245	98	9	70-130/30	

5.4.3  
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# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97571-1MS	N49351.D	5	02/08/11	JP	n/a	n/a	MSN1863
M97571-1MSD	N49352.D	5	02/08/11	JP	n/a	n/a	MSN1863
M97571-1	N49350.D	1	02/08/11	JP	n/a	n/a	MSN1863

The QC reported here applies to the following samples:

Method: SW846 8260B

M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	M97571-1 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
10061-02-6	trans-1,3-Dichloropropene	ND	250	289	116	265	106	9	70-130/30	
100-41-4	Ethylbenzene	ND	250	276	110	244	98	12	70-130/30	
87-68-3	Hexachlorobutadiene	ND	250	258	103	245	98	5	70-130/30	
591-78-6	2-Hexanone	ND	250	258	103	243	97	6	70-130/30	
98-82-8	Isopropylbenzene	ND	250	312	125	287	115	8	70-130/30	
99-87-6	p-Isopropyltoluene	ND	250	264	106	246	98	7	70-130/30	
1634-04-4	Methyl Tert Butyl Ether	ND	250	274	110	253	101	8	70-130/30	
108-10-1	4-Methyl-2-pentanone (MIBK)	ND	250	272	109	248	99	9	70-130/30	
74-95-3	Methylene bromide	ND	250	286	114	264	106	8	70-130/30	
75-09-2	Methylene chloride	ND	250	246	98	225	90	9	70-130/30	
103-65-1	n-Propylbenzene	ND	250	274	110	253	101	8	70-130/30	
100-42-5	Styrene	ND	250	284	114	253	101	12	70-130/30	
630-20-6	1,1,1,2-Tetrachloroethane	ND	250	286	114	249	100	14	70-130/30	
79-34-5	1,1,2,2-Tetrachloroethane	ND	250	266	106	259	104	3	70-130/30	
127-18-4	Tetrachloroethene	ND	250	271	108	236	94	14	70-130/30	
108-88-3	Toluene	ND	250	273	109	248	99	10	70-130/30	
87-61-6	1,2,3-Trichlorobenzene	ND	250	265	106	264	106	0	70-130/30	
120-82-1	1,2,4-Trichlorobenzene	ND	250	266	106	254	102	5	70-130/30	
71-55-6	1,1,1-Trichloroethane	ND	250	291	116	259	104	12	70-130/30	
79-00-5	1,1,2-Trichloroethane	ND	250	272	109	254	102	7	70-130/30	
79-01-6	Trichloroethene	ND	250	268	107	241	96	11	70-130/30	
75-69-4	Trichlorofluoromethane	ND	250	250	100	220	88	13	70-130/30	
96-18-4	1,2,3-Trichloropropane	ND	250	267	107	253	101	5	70-130/30	
95-63-6	1,2,4-Trimethylbenzene	ND	250	268	107	248	99	8	70-130/30	
108-67-8	1,3,5-Trimethylbenzene	ND	250	271	108	249	100	8	70-130/30	
108-05-4	Vinyl Acetate	ND	250	226	90	211	84	7	70-130/30	
75-01-4	Vinyl chloride	ND	250	235	94	217	87	8	70-130/30	
	m,p-Xylene	ND	500	552	110	498	100	10	70-130/30	
95-47-6	o-Xylene	ND	250	278	111	251	100	10	70-130/30	

CAS No.	Surrogate Recoveries	MS	MSD	M97571-1	Limits
1868-53-7	Dibromofluoromethane	104%	103%	103%	70-130%
2037-26-5	Toluene-D8	106%	105%	105%	70-130%
460-00-4	4-Bromofluorobenzene	102%	102%	106%	70-130%

5.4.3  
5

# Volatile Internal Standard Area Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSG4155-CC4151	Injection Date:	02/07/11
Lab File ID:	G103068.D	Injection Time:	10:23
Instrument ID:	GCMMSG	Method:	SW846 8260B

	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	288889	9.13	435103	10.01	231624	13.28	216289	15.86	120484	6.68
Upper Limit <sup>a</sup>	577778	9.63	870206	10.51	463248	13.78	432578	16.36	240968	7.18
Lower Limit <sup>b</sup>	144445	8.63	217552	9.51	115812	12.78	108145	15.36	60242	6.18

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
MSG4155-BS	290998	9.13	440015	10.01	230182	13.28	217623	15.86	124906	6.67
MSG4155-MB	288085	9.13	436887	10.01	218207	13.28	197908	15.86	125970	6.68
ZZZZZZ	285135	9.13	426309	10.01	216264	13.28	194938	15.86	102494	6.68
ZZZZZZ	280586	9.13	427010	10.01	215287	13.28	194254	15.86	112290	6.67
ZZZZZZ	279262	9.13	422635	10.01	211012	13.28	193900	15.86	112037	6.68
ZZZZZZ	279896	9.13	422058	10.01	215227	13.28	209254	15.85	129732	6.68
ZZZZZZ	285592	9.13	424868	10.01	217940	13.28	203305	15.86	118827	6.67
ZZZZZZ	283566	9.13	430583	10.01	218898	13.28	197964	15.86	125590	6.68
ZZZZZZ	283402	9.13	423770	10.01	216360	13.28	191575	15.86	117609	6.67
M97501-3	281561	9.13	421320	10.01	214704	13.28	192836	15.86	132090	6.67
M97395-6	278242	9.13	425540	10.01	215797	13.28	194019	15.86	122340	6.68
M97501-3MS	277367	9.13	421686	10.00	225099	13.28	212670	15.86	120667	6.68
M97501-3MSD	271678	9.13	419434	10.01	222346	13.28	207334	15.86	126924	6.68
ZZZZZZ	272087	9.13	413043	10.01	209807	13.28	187865	15.86	120808	6.68
ZZZZZZ	275920	9.13	418813	10.01	216500	13.29	207697	15.86	132583	6.68
ZZZZZZ	274294	9.13	417949	10.01	214790	13.29	204814	15.86	125990	6.67
ZZZZZZ	276812	9.13	419200	10.01	211955	13.28	198599	15.86	123083	6.68
ZZZZZZ	280617	9.13	426540	10.01	213698	13.28	197203	15.86	126376	6.67
ZZZZZZ	272872	9.13	411971	10.01	209757	13.28	189876	15.86	121905	6.67
ZZZZZZ	275767	9.13	418827	10.01	212666	13.28	191314	15.86	125988	6.67
ZZZZZZ	274528	9.13	417090	10.01	208169	13.28	187778	15.86	125065	6.67
ZZZZZZ	275354	9.13	413758	10.01	208724	13.29	189391	15.86	124116	6.67

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.5.1  
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# Volatile Internal Standard Area Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSL1644-CC1580	Injection Date:	02/03/11
Lab File ID:	L49352.D	Injection Time:	08:48
Instrument ID:	GCMSL	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	105901	8.19	181809	9.03	107264	12.27	103249	14.83	41968	5.82
Upper Limit <sup>a</sup>	211802	8.69	363618	9.53	214528	12.77	206498	15.33	83936	6.32
Lower Limit <sup>b</sup>	52951	7.69	90905	8.53	53632	11.77	51625	14.33	20984	5.32

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSL1644-BS	108646	8.19	187717	9.03	108952	12.26	102140	14.82	43019	5.82
MSL1644-BSD	110180	8.19	192418	9.03	113193	12.27	101376	14.82	46788	5.82
MSL1644-MB	106445	8.19	184246	9.03	100847	12.27	91449	14.83	44553	5.82
ZZZZZZ	109701	8.19	192929	9.03	105270	12.27	96578	14.83	46038	5.82
M97395-1	105439	8.19	180965	9.03	100147	12.27	93496	14.83	45301	5.82
M97395-7	107751	8.19	181588	9.03	101331	12.27	95845	14.83	43571	5.82
ZZZZZZ	105975	8.19	179546	9.03	100334	12.27	92316	14.83	43483	5.82
ZZZZZZ	103093	8.19	182170	9.03	100352	12.27	92768	14.83	45946	5.82
ZZZZZZ	103494	8.20	179128	9.03	97870	12.27	90407	14.83	44547	5.82
ZZZZZZ	101830	8.20	176345	9.03	96443	12.27	90362	14.83	44746	5.82
ZZZZZZ	101093	8.19	170877	9.03	94042	12.27	90580	14.83	44739	5.82
ZZZZZZ	101917	8.20	175391	9.03	99956	12.27	92305	14.83	47173	5.82
M97395-2	102472	8.19	177965	9.03	99280	12.27	91038	14.83	45911	5.82
M97395-3	101167	8.19	172866	9.03	96569	12.27	88733	14.83	42020	5.82
M97395-4	102626	8.19	175798	9.03	101095	12.27	92663	14.83	48428	5.82
M97395-5	148905	8.19	255890	9.02	140714	12.27	109301	14.83	41996	5.94
M97395-9	97198	8.38	115071	9.15	103278	12.28	111280	14.83	32866	5.85
M97395-10	112597	8.34	70927 <sup>c</sup>	9.12	113570	12.27	126724	14.83	38498	5.85
M97395-11	126697	8.35	84425 <sup>c</sup>	9.12	116055	12.27	128034	14.83	38660	5.86
M97395-2MS	151622	8.19	239143	9.03	130548	12.27	139429	14.82	59076	5.82
M97395-2MSD	155325	8.19	242099	9.03	129116	12.26	138435	14.82	50533	5.82

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.  
 (c) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

5.5.2  
5

# Volatile Internal Standard Area Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSN1863-CC1860	Injection Date:	02/08/11
Lab File ID:	N49331.D	Injection Time:	11:32
Instrument ID:	GCMSEN	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	120498	8.60	193537	9.46	118237	12.71	90271	15.27	60406	6.19
Upper Limit <sup>a</sup>	240996	9.10	387074	9.96	236474	13.21	180542	15.77	120812	6.69
Lower Limit <sup>b</sup>	60249	8.10	96769	8.96	59119	12.21	45136	14.77	30203	5.69

Lab Sample ID	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
MSN1863-BS	123183	8.60	201145	9.46	118384	12.71	93491	15.27	61090	6.19
MSN1862-BS2	123183	8.60	201145	9.46	118384	12.71	93491	15.27	61090	6.19
MSN1863-BSD	125398	8.60	206085	9.46	119030	12.71	95206	15.27	66662	6.19
MSN1863-MB	122108	8.60	198756	9.46	109803	12.71	83866	15.27	63539	6.19
MSN1862-MB2	122108	8.60	198756	9.46	109803	12.71	83866	15.27	63539	6.19
ZZZZZZ	122323	8.60	194467	9.46	110471	12.71	83794	15.27	60701	6.19
ZZZZZZ	120141	8.61	195522	9.46	110762	12.71	81488	15.27	57908	6.19
M97511-30	118759	8.60	192452	9.46	109000	12.71	78537	15.27	64508	6.19
M97395-8	114746	8.61	188073	9.47	108372	12.71	79325	15.27	60131	6.19
M97395-9	116664	8.60	188950	9.46	108691	12.71	78572	15.27	55624	6.19
M97395-10	115780	8.60	186275	9.46	106898	12.71	78399	15.27	59084	6.19
M97395-11	114890	8.61	187152	9.46	104973	12.71	79604	15.27	53040	6.19
ZZZZZZ	112248	8.61	180510	9.46	106819	12.71	81492	15.27	51379	6.19
ZZZZZZ	112917	8.60	185750	9.46	106901	12.71	80075	15.27	54444	6.19
ZZZZZZ	110845	8.61	180342	9.46	103703	12.71	74545	15.27	55411	6.19
ZZZZZZ	110106	8.60	182374	9.46	104527	12.71	76395	15.27	54234	6.19
ZZZZZZ	112540	8.60	181125	9.46	102642	12.71	76129	15.27	57030	6.19
M97571-1	109994	8.60	180385	9.46	102914	12.71	76085	15.27	56290	6.19
M97571-1MS	113380	8.60	184448	9.46	109448	12.71	89494	15.27	59340	6.19
M97571-1MSD	118722	8.60	194401	9.46	116801	12.71	92086	15.27	61865	6.18
ZZZZZZ	120146	8.60	197218	9.46	110212	12.71	79768	15.27	57856	6.19
ZZZZZZ	115390	8.60	189072	9.46	108661	12.71	78765	15.27	57044	6.18

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.5.3  
5

# Volatile Surrogate Recovery Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8260B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M97395-1	L49358.D	102.0	99.0	89.0
M97395-2	L49366.D	102.0	100.0	91.0
M97395-3	L49367.D	97.0	100.0	95.0
M97395-4	L49368.D	100.0	102.0	94.0
M97395-5	L49369.D	86.0	101.0	101.0
M97395-6	G103080.D	100.0	99.0	98.0
M97395-7	L49359.D	100.0	100.0	115.0
M97395-8	N49339.D	103.0	105.0	106.0
M97395-9	N49340.D	100.0	106.0	105.0
M97395-9	L49372.D	38.0* a	149.0* a	88.0
M97395-10	N49341.D	99.0	105.0	104.0
M97395-10	L49373.D	38.0* a	269.0* a	91.0
M97395-11	N49342.D	99.0	103.0	101.0
M97395-11	L49374.D	85.0	257.0* a	90.0
M97395-2MS	L49376.D	89.0	99.0	86.0
M97395-2MSD	L49377.D	85.0	97.0	84.0
M97501-3MS	G103081.D	101.0	101.0	94.0
M97501-3MSD	G103082.D	102.0	100.0	96.0
M97571-1MS	N49351.D	104.0	106.0	102.0
M97571-1MSD	N49352.D	103.0	105.0	102.0
MSG4155-BS	G103069.D	100.0	99.0	95.0
MSG4155-MB	G103071.D	99.0	99.0	100.0
MSL1644-BS	L49353.D	96.0	97.0	90.0
MSL1644-BSD	L49354.D	98.0	100.0	95.0
MSL1644-MB	L49356.D	103.0	100.0	96.0
MSN1863-BS	N49332.D	104.0	106.0	102.0
MSN1863-BSD	N49333.D	101.0	105.0	101.0
MSN1863-MB	N49335.D	101.0	104.0	105.0

Surrogate Compounds	Recovery Limits
S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

(a) Outside control limits due to possible matrix interference. Confirmed by reanalysis.

5.6.1  
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## GC/MS Semi-volatiles

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6

## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-MB	S21263.D	1	02/03/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

6.1.1  
**6**

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	

# Method Blank Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-MB	S21263.D	1	02/03/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

6.1.1

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CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	0.63	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries	Limits	
367-12-4	2-Fluorophenol	50%	15-110%
4165-62-2	Phenol-d5	34%	15-110%
118-79-6	2,4,6-Tribromophenol	85%	15-110%
4165-60-0	Nitrobenzene-d5	85%	30-130%
321-60-8	2-Fluorobiphenyl	88%	30-130%
1718-51-0	Terphenyl-d14	91%	30-130%



# Blank Spike Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-BS	S21264.D	1	02/03/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

6.2.1

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CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	41.1	41	30-130
95-57-8	2-Chlorophenol	100	74.8	75	30-130
59-50-7	4-Chloro-3-methyl phenol	100	80.9	81	30-130
120-83-2	2,4-Dichlorophenol	100	83.4	83	30-130
105-67-9	2,4-Dimethylphenol	100	41.3	41	30-130
51-28-5	2,4-Dinitrophenol	100	79.1	79	30-130
534-52-1	4,6-Dinitro-o-cresol	100	79.1	79	30-130
95-48-7	2-Methylphenol	100	67.2	67	30-130
	3&4-Methylphenol	200	133	67	30-130
88-75-5	2-Nitrophenol	100	86.8	87	30-130
100-02-7	4-Nitrophenol	100	47.5	48	30-130
87-86-5	Pentachlorophenol	100	70.2	70	30-130
108-95-2	Phenol	100	37.6	38	30-130
95-95-4	2,4,5-Trichlorophenol	100	82.3	82	30-130
88-06-2	2,4,6-Trichlorophenol	100	76.4	76	30-130
83-32-9	Acenaphthene	50	38.8	78	40-140
208-96-8	Acenaphthylene	50	33.1	66	40-140
62-53-3	Aniline	50	19.6	39* a	40-140
120-12-7	Anthracene	50	37.8	76	40-140
56-55-3	Benzo(a)anthracene	50	42.2	84	40-140
50-32-8	Benzo(a)pyrene	50	35.4	71	40-140
205-99-2	Benzo(b)fluoranthene	50	42.6	85	40-140
191-24-2	Benzo(g,h,i)perylene	50	44.2	88	40-140
207-08-9	Benzo(k)fluoranthene	50	39.2	78	40-140
101-55-3	4-Bromophenyl phenyl ether	50	39.8	80	40-140
85-68-7	Butyl benzyl phthalate	50	40.7	81	40-140
91-58-7	2-Chloronaphthalene	50	37.7	75	40-140
106-47-8	4-Chloroaniline	50	17.1	34* a	40-140
218-01-9	Chrysene	50	42.6	85	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	40.1	80	40-140
111-44-4	bis(2-Chloroethyl)ether	50	37.7	75	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	39.9	80	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	40.4	81	40-140
121-14-2	2,4-Dinitrotoluene	50	41.9	84	40-140
606-20-2	2,6-Dinitrotoluene	50	41.2	82	40-140
91-94-1	3,3'-Dichlorobenzidine	50	23.6	47	40-140

# Blank Spike Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-BS	S21264.D	1	02/03/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

6.2.1

6

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
53-70-3	Dibenzo(a,h)anthracene	50	44.9	90	40-140
132-64-9	Dibenzofuran	50	38.2	76	40-140
84-74-2	Di-n-butyl phthalate	50	39.3	79	40-140
117-84-0	Di-n-octyl phthalate	50	44.5	89	40-140
84-66-2	Diethyl phthalate	50	42.0	84	40-140
131-11-3	Dimethyl phthalate	50	41.5	83	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	41.7	83	40-140
206-44-0	Fluoranthene	50	40.7	81	40-140
86-73-7	Fluorene	50	40.5	81	40-140
118-74-1	Hexachlorobenzene	50	40.9	82	40-140
77-47-4	Hexachlorocyclopentadiene	50	15.7	31* a	40-140
67-72-1	Hexachloroethane	50	30.8	62	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	46.2	92	40-140
78-59-1	Isophorone	50	39.1	78	40-140
91-57-6	2-Methylnaphthalene	50	36.8	74	40-140
88-74-4	2-Nitroaniline	50	43.6	87	40-140
99-09-2	3-Nitroaniline	50	22.7	45	40-140
100-01-6	4-Nitroaniline	50	36.0	72	40-140
91-20-3	Naphthalene	50	39.7	79	40-140
98-95-3	Nitrobenzene	50	39.7	79	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	41.8	84	40-140
86-30-6	N-Nitrosodiphenylamine	50	40.1	80	40-140
85-01-8	Phenanthrene	50	39.9	80	40-140
129-00-0	Pyrene	50	40.4	81	40-140
110-86-1	Pyridine	50	24.4	49	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	52%	15-110%
4165-62-2	Phenol-d5	36%	15-110%
118-79-6	2,4,6-Tribromophenol	83%	15-110%
4165-60-0	Nitrobenzene-d5	79%	30-130%
321-60-8	2-Fluorobiphenyl	79%	30-130%
1718-51-0	Terphenyl-d14	80%	30-130%

## Blank Spike Summary

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Job Number: M97395

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-BS	S21264.D	1	02/03/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

(a) Outside control limits. Blank Spike meets program technical requirements.

6.2.1

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# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-MS	S21265.D	1	02/03/11	PR	01/27/11	OP23969	MSS890
OP23969-MSD	S21266.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
M97395-2	S21267.D	1	02/04/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	M97395-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	109	50.9	47	52.9	50	4	30-130/20
95-57-8	2-Chlorophenol	ND	109	85.4	79	88.5	83	4	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	109	94.2	87	98.1	92	4	30-130/20
120-83-2	2,4-Dichlorophenol	ND	109	98.2	90	101	95	3	30-130/20
105-67-9	2,4-Dimethylphenol	ND	109	49.3	45	50.9	48	3	30-130/20
51-28-5	2,4-Dinitrophenol	ND	109	96.2	89	105	99	9	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND	109	98.3	90	103	97	5	30-130/20
95-48-7	2-Methylphenol	ND	109	81.0	75	81.2	76	0	30-130/20
	3&4-Methylphenol	ND	217	159	73	158	74	1	30-130/20
88-75-5	2-Nitrophenol	ND	109	101	93	106	100	5	30-130/20
100-02-7	4-Nitrophenol	ND	109	57.2	53	61.3	58	7	30-130/20
87-86-5	Pentachlorophenol	ND	109	94.1	87	91.9	86	2	30-130/20
108-95-2	Phenol	ND	109	45.2	42	42.9	40	5	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	109	95.5	88	100	94	5	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	109	90.3	83	95.0	89	5	30-130/20
83-32-9	Acenaphthene	ND	54.3	46.5	86	47.7	90	3	40-140/20
208-96-8	Acenaphthylene	ND	54.3	39.1	72	40.0	75	2	40-140/20
62-53-3	Aniline	ND	54.3	21.9	40	20.1	38* a	9	40-140/20
120-12-7	Anthracene	ND	54.3	45.1	83	46.0	86	2	40-140/20
56-55-3	Benzo(a)anthracene	ND	54.3	49.3	91	48.7	92	1	40-140/20
50-32-8	Benzo(a)pyrene	ND	54.3	40.5	75	41.3	78	2	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	54.3	47.5	87	48.0	90	1	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	54.3	50.4	93	48.4	91	4	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	54.3	42.0	77	45.9	86	9	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	54.3	48.9	90	49.4	93	1	40-140/20
85-68-7	Butyl benzyl phthalate	ND	54.3	47.8	88	45.2	85	6	40-140/20
91-58-7	2-Chloronaphthalene	ND	54.3	45.1	83	46.7	88	3	40-140/20
106-47-8	4-Chloroaniline	ND	54.3	16.8	31* a	20.0	38* a	17	40-140/20
218-01-9	Chrysene	ND	54.3	50.6	93	50.6	95	0	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	54.3	47.7	88	48.6	91	2	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	54.3	43.5	80	45.3	85	4	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	54.3	48.2	89	48.9	92	1	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	54.3	47.6	88	49.6	93	4	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	54.3	48.9	90	52.2	98	7	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	54.3	49.9	92	51.4	97	3	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	54.3	19.8	36* b	19.2	36* b	3	40-140/20

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-MS	S21265.D	1	02/03/11	PR	01/27/11	OP23969	MSS890
OP23969-MSD	S21266.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
M97395-2	S21267.D	1	02/04/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

CAS No.	Compound	M97395-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
53-70-3	Dibenzo(a,h)anthracene	ND		54.3	51.1	94	50.3	95	2	40-140/20
132-64-9	Dibenzofuran	ND		54.3	45.5	84	46.8	88	3	40-140/20
84-74-2	Di-n-butyl phthalate	ND		54.3	48.1	89	49.0	92	2	40-140/20
117-84-0	Di-n-octyl phthalate	ND		54.3	43.7	80	45.1	85	3	40-140/20
84-66-2	Diethyl phthalate	0.77	JB	54.3	55.3	100	52.6	97	5	40-140/20
131-11-3	Dimethyl phthalate	ND		54.3	49.0	90	50.9	96	4	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		54.3	45.7	84	45.7	86	0	40-140/20
206-44-0	Fluoranthene	ND		54.3	47.2	87	51.0	96	8	40-140/20
86-73-7	Fluorene	ND		54.3	48.0	88	50.3	95	5	40-140/20
118-74-1	Hexachlorobenzene	ND		54.3	49.5	91	49.8	94	1	40-140/20
77-47-4	Hexachlorocyclopentadiene	ND		54.3	21.4	39* b	21.0	39* b	2	40-140/20
67-72-1	Hexachloroethane	ND		54.3	37.8	70	36.7	69	3	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		54.3	52.1	96	51.5	97	1	40-140/20
78-59-1	Isophorone	ND		54.3	46.0	85	48.3	91	5	40-140/20
91-57-6	2-Methylnaphthalene	ND		54.3	43.5	80	45.4	85	4	40-140/20
88-74-4	2-Nitroaniline	ND		54.3	46.2	85	50.6	95	9	40-140/20
99-09-2	3-Nitroaniline	ND		54.3	26.3	48	29.5	55	11	40-140/20
100-01-6	4-Nitroaniline	ND		54.3	37.4	69	41.5	78	10	40-140/20
91-20-3	Naphthalene	ND		54.3	46.6	86	48.5	91	4	40-140/20
98-95-3	Nitrobenzene	ND		54.3	50.8	93	51.7	97	2	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		54.3	49.1	90	50.5	95	3	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		54.3	49.0	90	48.9	92	0	40-140/20
85-01-8	Phenanthrene	ND		54.3	46.3	85	48.1	90	4	40-140/20
129-00-0	Pyrene	ND		54.3	46.7	86	44.8	84	4	40-140/20
110-86-1	Pyridine	ND		54.3	28.9	53	26.8	50	8	40-140/20

CAS No.	Surrrogate Recoveries	MS	MSD	M97395-2	Limits
367-12-4	2-Fluorophenol	56%	58%	45%	15-110%
4165-62-2	Phenol-d5	40%	40%	30%	15-110%
118-79-6	2,4,6-Tribromophenol	91%	95%	79%	15-110%
4165-60-0	Nitrobenzene-d5	86%	91%	77%	30-130%
321-60-8	2-Fluorobiphenyl	84%	89%	77%	30-130%
1718-51-0	Terphenyl-d14	74%	71%	65%	30-130%

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97395  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23969-MS	S21265.D	1	02/03/11	PR	01/27/11	OP23969	MSS890
OP23969-MSD	S21266.D	1	02/04/11	PR	01/27/11	OP23969	MSS890
M97395-2	S21267.D	1	02/04/11	PR	01/27/11	OP23969	MSS890

The QC reported here applies to the following samples:

Method: SW846 8270C

M97395-2, M97395-3, M97395-4, M97395-5, M97395-6, M97395-7, M97395-8, M97395-9, M97395-10, M97395-11

- (a) Outside control limits. Blank Spike meets program technical requirements.
- (b) Outside control limits due to possible matrix interference. Refer to Blank Spike.

6.3.1

6

# Semivolatiles Internal Standard Area Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSS890-CC884	Injection Date:	02/03/11
Lab File ID:	S21252.D	Injection Time:	18:04
Instrument ID:	GCMSS	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	196735	5.68	741586	7.03	343868	9.20	512662	11.39	455373	15.74	439084	17.97
Upper Limit <sup>a</sup>	393470	6.18	1483172	7.53	687736	9.70	1025324	11.89	910746	16.24	878168	18.47
Lower Limit <sup>b</sup>	98368	5.18	370793	6.53	171934	8.70	256331	10.89	227687	15.24	219542	17.47

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	170549	5.68	721000	7.02	353599	9.20	525818	11.39	476073	15.73	461602	17.96
ZZZZZZ	216841	5.68	867810	7.02	401551	9.20	592062	11.39	446876	15.73	405132	17.96
ZZZZZZ	247101	5.68	1014141	7.02	470070	9.20	681343	11.39	503218	15.73	421782	17.96
ZZZZZZ	181616	5.68	770827	7.02	361338	9.20	536249	11.39	461543	15.73	460237	17.96
ZZZZZZ	257111	5.69	1083312	7.02	509786	9.20	755779	11.39	544618	15.73	444170	17.96
ZZZZZZ	193567	5.68	782417	7.02	373825	9.20	542825	11.39	462336	15.73	460688	17.96
ZZZZZZ	199287	5.69	779955	7.03	358714	9.20	498013	11.39	409563	15.74	457273	17.98
ZZZZZZ	202729	5.68	793074	7.02	371522	9.20	534304	11.39	443400	15.73	444495	17.97
ZZZZZZ	213181	5.68	835510	7.02	383910	9.20	558341	11.39	457683	15.73	470152	17.97
ZZZZZZ	218292	5.68	891927	7.02	413832	9.20	615730	11.39	531117	15.73	515164	17.97
OP23969-MB	220569	5.68	881336	7.02	406408	9.20	608583	11.39	502833	15.73	488858	17.96
OP23969-BS	226173	5.68	859990	7.03	400515	9.20	591590	11.39	486555	15.74	430961	17.97
OP23969-MS	204864	5.68	772780	7.03	356132	9.20	508726	11.39	420262	15.73	425478	17.97
OP23969-MSD	191783	5.69	725794	7.03	339867	9.20	505014	11.39	470044	15.74	456720	17.97
M97395-2	194794	5.68	781118	7.03	375345	9.20	562067	11.39	496129	15.73	493087	17.97
M97395-3	200059	5.68	792115	7.03	375808	9.20	559019	11.39	493864	15.73	477823	17.97
M97395-4	202685	5.68	778188	7.03	368945	9.20	548227	11.39	473505	15.73	471204	17.96
M97395-5	207826	5.68	801552	7.03	385774	9.20	567546	11.39	488096	15.73	467981	17.97
M97395-6	220351	5.68	873884	7.03	418552	9.20	630179	11.39	508056	15.73	447543	17.97
M97395-7	214550	5.68	865023	7.03	406941	9.20	610343	11.39	498210	15.73	457106	17.97
M97395-8	216162	5.68	853507	7.03	378859	9.20	559539	11.39	440179	15.74	426076	17.97
M97395-9	211510	5.69	846878	7.03	402274	9.20	599774	11.39	487275	15.73	425722	17.97
M97395-10	196099	5.69	779108	7.03	369067	9.20	550554	11.39	434543	15.74	400950	17.97
M97395-11	206822	5.69	818548	7.03	377316	9.20	571651	11.39	439088	15.74	401798	17.97
ZZZZZZ	223567	5.69	874747	7.03	422309	9.20	624865	11.39	519277	15.73	467699	17.97

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.1

6

# Semivolatile Surrogate Recovery Summary

Job Number: M97395  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8270C	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M97395-2	S21267.D	45.0	30.0	79.0	77.0	77.0	65.0
M97395-3	S21268.D	43.0	33.0	71.0	82.0	79.0	77.0
M97395-4	S21269.D	48.0	31.0	90.0	86.0	81.0	79.0
M97395-5	S21270.D	46.0	32.0	87.0	81.0	77.0	77.0
M97395-6	S21271.D	38.0	28.0	67.0	86.0	85.0	96.0
M97395-7	S21272.D	51.0	34.0	87.0	87.0	86.0	95.0
M97395-8	S21273.D	53.0	35.0	99.0	86.0	90.0	89.0
M97395-9	S21274.D	43.0	28.0	79.0	73.0	73.0	82.0
M97395-10	S21275.D	52.0	34.0	90.0	81.0	80.0	83.0
M97395-11	S21276.D	55.0	36.0	97.0	83.0	84.0	90.0
OP23969-BS	S21264.D	52.0	36.0	83.0	79.0	79.0	80.0
OP23969-MB	S21263.D	50.0	34.0	85.0	85.0	88.0	91.0
OP23969-MS	S21265.D	56.0	40.0	91.0	86.0	84.0	74.0
OP23969-MSD	S21266.D	58.0	40.0	95.0	91.0	89.0	71.0

Surrogate Compounds	Recovery Limits
S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

6.5.1  
**6**



# Roxana Groundwater Quarterly – 1st Quarter 2011

Laboratory SDG: M97427

Data Reviewer: Wendy Buchman

Peer Reviewer: Elizabeth Kunkel

Date Reviewed: 2/25/2011

Guidance: USEPA National Functional Guidelines for Superfund Organic Methods Data Review 2008

Sample Identification	Sample Identification
P93A-ROX-012611	P93B-ROX-012611
P93C-ROX-012611	TB-ROX-012611

## 1.0 Data Package Completeness

*Were all items delivered as specified in the QAPP and COC as appropriate?*

Yes

## 2.0 Laboratory Case Narrative \ Cooler Receipt Form

*Were problems noted in the laboratory case narrative or cooler receipt form?*

Yes, the laboratory case narrative indicated VOC and SVOC LCS/LCSD recoveries were outside evaluation criteria. VOC MS/MSD recoveries were outside of evaluation criteria. Additionally, diethyl phthalate was detected in the method blank. Although not indicated in the laboratory case narrative, methylene chloride was detected in the trip blank. Samples P93A-ROX-012611, P93B-ROX-012611, and P93C-ROX-012611 were rerun at dilutions due to high levels of benzene; the compound benzene was reported from the second runs and all other compounds were reported from the original analyses. These issues are addressed further in the appropriate sections below.

The cooler receipt form indicated two out of two coolers were received by the laboratory at 1.9°C and 1.4°C which were outside the 4°C ± 2°C criteria. The samples were received in good condition; therefore, no qualification of data was required.

## 3.0 Holding Times

*Were samples extracted/analyzed within applicable limits?*

Yes

## 4.0 Blank Contamination

*Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?*

Yes. The following table summarizes analytes detected in sample-associated blanks.

Blank ID	Parameter	Analyte	Concentration/Amount
TB-ROX-012611	VOCs	Methylene chloride	4.7 µg/L
OP23982-MB	SVOCs	Diethyl phthalate	0.83 µg/L

Qualifications due to blank contamination are included in the table below. Analytical data that were reported non-detect or at concentrations greater than five times (5X) the associated blank concentration (10X for common laboratory contaminants) did not require qualification.

Sample ID	Parameter	Analyte	New Reporting Limit (RL)	Qualification
P93A-ROX-012611	SVOCs	Diethyl phthalate	-	<b>U</b>
P93B-ROX-012611	SVOCs	Diethyl phthalate	-	<b>U</b>
P93C-ROX-012611	SVOCs	Diethyl phthalate	-	<b>U</b>

## 5.0 Laboratory Control Sample

*Were LCS recoveries within evaluation criteria?*

No

LCS ID	Parameter	Analyte	LCS Recovery	LCS Criteria
MSE2175-BS	VOCs	Dichlorodifluoromethane	<b>142</b>	70-130
MSE2175-BS	VOCs	2,2-Dichloropropane	<b>133</b>	70-130
MSE2175-BS	VOCs	Hexachlorobutadiene	<b>132</b>	70-130
MSE2175-BS	VOCs	Vinyl Acetate	<b>66</b>	70-130
OP23982-BS	SVOCs	Benzoic Acid	<b>24</b>	30-130
OP23982-BS	SVOCs	4-Chloroaniline	<b>34</b>	30-130
OP23982-BS	SVOCs	Hexachlorocyclopentadiene	<b>37</b>	40-140
OP23982-BS	SVOCs	3-Nitroaniline	<b>36</b>	40-140

Analytical data that required qualification based on LCS data are included in the table below. Analytical data reported as non-detect and associated with LCS recoveries above evaluation criteria, indicating a possible high bias, did not require qualification.

Sample ID	Parameter	Analyte	Qualification
P93A-ROX-012611	VOCs	Vinyl Acetate	<b>UJ</b>
P93A-ROX-012611	SVOCs	Benzoic Acid	<b>UJ</b>
P93A-ROX-012611	SVOCs	4-Chloroaniline	<b>UJ</b>
P93A-ROX-012611	SVOCs	Hexachlorocyclopentadiene	<b>UJ</b>
P93A-ROX-012611	SVOCs	3-Nitroaniline	<b>UJ</b>
P93B-ROX-012611	VOCs	Vinyl Acetate	<b>UJ</b>
P93B-ROX-012611	SVOCs	Benzoic Acid	<b>UJ</b>
P93B-ROX-012611	SVOCs	4-Chloroaniline	<b>UJ</b>
P93B-ROX-012611	SVOCs	Hexachlorocyclopentadiene	<b>UJ</b>
P93B-ROX-012611	SVOCs	3-Nitroaniline	<b>J</b>
P93C-ROX-012611	VOCs	Vinyl Acetate	<b>UJ</b>
P93C-ROX-012611	SVOCs	Benzoic Acid	<b>UJ</b>
P93C-ROX-012611	SVOCs	4-Chloroaniline	<b>UJ</b>
P93C-ROX-012611	SVOCs	Hexachlorocyclopentadiene	<b>UJ</b>
P93C-ROX-012611	SVOCs	3-Nitroaniline	<b>UJ</b>

## 6.0 Surrogate Recoveries

*Were surrogate recoveries within evaluation criteria?*

Yes

## 7.0 Matrix Spike and Matrix Spike Duplicate Recoveries

*Were MS/MSD samples analyzed as part of this SDG?*

Yes. Sample P93B-ROX-012611 was spiked and analyzed for VOCs and SVOCs.

*Were MS/MSD recoveries within evaluation criteria?*

No

MS/MSD ID	Parameter	Analyte	MS/MSD Recovery	RPD	MS/MSD/ RPD Criteria
P93B-ROX-012611	VOCs	Acetone	1564/1558	0	70-130/30
P93B-ROX-012611	VOCs	Dichlorodifluoromethane	141/139	2	70-130/30
P93B-ROX-012611	VOCs	Isopropylbenzene	140/143	2	70-130/30
P93B-ROX-012611	VOCs	Styrene	69/77	11	70-130/30
P93B-ROX-012611	SVOCs	Phenol	32/20	10	30-130/20

Analytical results reported as nondetect and associated with MS/MSD recoveries above evaluation criteria, indicating a high bias, did not require qualification. USEPA National Functional Guidelines for Organic Data Review indicates that organic data does not require qualification based on MS/MSD data alone. LCS recoveries for styrene and phenol were within evaluation criteria; therefore, no qualification of data was required.

## 8.0 Internal Standard (IS) Recoveries

*Were internal standard area recoveries within evaluation criteria?*

Yes

## 9.0 Laboratory Duplicate Results

*Were laboratory duplicate samples collected as part of this SDG?*

No

## 10.0 Field Duplicate Results

*Were field duplicate samples collected as part of this SDG?*

No

## 11.0 Sample Dilutions

*For samples that were diluted and nondetect, were undiluted results also reported?*

Not applicable; analytes were detected in samples that were diluted.

**12.0 Additional Qualifications**

*Were additional qualifications applied?*

No



03/03/11

Technical Report for

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Shell Oil

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

SAP#340061

Accutest Job Number: M97427

Sampling Date: 01/26/11

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Report to:

URS Corporation

Elizabeth\_Kunkel@URSCorp.com

ATTN: Elizabeth Kunkel

Total number of pages in report: 53

Reviewed  
on  
3/3/2011



Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Conference and/or state specific certification programs as applicable.

*Reza Fand*  
Reza Fand  
Lab Director

Client Service contact: Kristen Blanchard 508-481-6200

Certifications: MA (M-MA136,SW846 NELAC) CT (PH-0109) NH (250210) RI (00071) ME (MA00136) FL (E87579) NY (11791) NJ (MA926) PA (6801121) ND (R-188) CO MN (11546AA) NC (653) IL (002337) ISO 17025:2005 (L2235)

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Test results relate only to samples analyzed.

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## Sample Summary

Shell Oil

Job No: M97427

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

Sample Number	Collected Date	Time By	Received	Matrix Code	Type	Client Sample ID
M97427-1	01/26/11	11:50	NSKH 01/27/11	AQ	Ground Water	P93A-ROX_012611
M97427-2	01/26/11	10:55	NSKH 01/27/11	AQ	Ground Water	P93B-ROX_012611
M97427-2D	01/26/11	10:55	NSKH 01/27/11	AQ	Water Dup/MSD	P93B-ROX_012611
M97427-2S	01/26/11	10:55	NSKH 01/27/11	AQ	Water Matrix Spike	P93B-ROX_012611
M97427-3	01/26/11	11:20	NSKH 01/27/11	AQ	Ground Water	P93C-ROX_012611
M97427-4	01/26/11	00:00	NSKH 01/27/11	AQ	Trip Blank Water	TB-ROX-012611

## SAMPLE DELIVERY GROUP CASE NARRATIVE

Client: Shell Oil

Job No M97427

Site: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Report Date 2/9/2011 9:31:54 AM

3 Sample(s), 1 Trip Blank(s) and 0 Field Blank(s) were collected on 01/26/2011 and were received at Accutest on 01/27/2011 properly preserved, at 1.9 Deg. C and intact. These Samples received an Accutest job number of M97427. A listing of the Laboratory Sample ID, Client Sample ID and dates of collection are presented in the Results Summary Section of this report.

Except as noted below, all method specified calibrations and quality control performance criteria were met for this job. For more information, please refer to QC summary pages.

### Volatiles by GCMS By Method SW846 8260B

Matrix AQ	Batch ID: MSE2175
-----------	-------------------

- All samples were analyzed within the recommended method holding time.
- Sample(s) M97427-2MS, M97427-2MSD were used as the QC samples indicated.
- All method blanks for this batch meet method specific criteria.
- Blank Spike Recovery(s) for 2,2-Dichloropropane, Dichlorodifluoromethane, Hexachlorobutadiene, Vinyl Acetate are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for Acetone, Dichlorodifluoromethane, Isopropylbenzene, Styrene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for Dichlorodifluoromethane, Isopropylbenzene are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- MS/MSD Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

Matrix AQ	Batch ID: MSE2177
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- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M97427-2MS, M97427-2MSD were used as the QC samples indicated.
- MS/MSD Recovery(s) for Benzene are outside control limits. Outside control limits due to high level in sample relative to spike amount.

### Extractables by GCMS By Method SW846 8270C

Matrix AQ	Batch ID: OP23982
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- All samples were extracted within the recommended method holding time.
- All samples were analyzed within the recommended method holding time.
- All method blanks for this batch meet method specific criteria.
- Sample(s) M97427-2MS, M97427-2MSD were used as the QC samples indicated.
- Blank Spike Recovery(s) for 3-Nitroaniline, 4-Chloroaniline, Benzoic Acid, Hexachlorocyclopentadiene, Phenol are outside control limits. Blank Spike meets program technical requirements.
- Matrix Spike Recovery(s) for 3,3'-Dichlorobenzidine, 4-Chloroaniline are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.
- Matrix Spike Duplicate Recovery(s) for 3,3'-Dichlorobenzidine, 4-Chloroaniline, Phenol are outside control limits. Outside control limits due to possible matrix interference. Refer to Blank Spike.



The Accutest Laboratories of New England certifies that all analysis were performed within method specification. It is further recommended that this report to be used in its entirety. The Accutest Laboratories of NE, Laboratory Director or assignee as verified by the signature on the cover page has authorized the release of this report(M97427).



Sample Results

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Report of Analysis

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## Report of Analysis

Client Sample ID:	P93A-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-1	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51525.D	1	02/03/11	TD	n/a	n/a	MSE2175
Run #2	E51582.D	5000	02/05/11	TD	n/a	n/a	MSE2177

Run #1	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	491000 <sup>a</sup>	2500	1800	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	5.9	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	9.6	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	21.3	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	0.81	1.0	0.42	ug/l	J
108-90-7	Chlorobenzene	0.61	1.0	0.61	ug/l	J
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3.1  
3

Client Sample ID: P93A-ROX_012611	Date Sampled: 01/26/11
Lab Sample ID: M97427-1	Date Received: 01/27/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8260B	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	373	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	1.6	5.0	0.56	ug/l	J
74-88-4	Iodomethane	ND	5.0	0.47	ug/l	
98-82-8	Isopropylbenzene	22.5	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	4.7	5.0	0.45	ug/l	J
1634-04-4	Methyl Tert Butyl Ether	124	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	25.4	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	65.4	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	2.6	5.0	1.0	ug/l	J
120-82-1	1,2,4-Trichlorobenzene	1.5	5.0	0.57	ug/l	J
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	1.7	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	210	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	45.0	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	"UJ"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	622	1.0	0.62	ug/l	
95-47-6	o-Xylene	70.5	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	98%	111%	70-130%
2037-26-5	Toluene-D8	121%	111%	70-130%
460-00-4	4-Bromofluorobenzene	102%	107%	70-130%

(a) Result is from Run# 2

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ND = Not detected	MDL - Method Detection Limit	J = Indicates an estimated value
RL = Reporting Limit		B = Indicates analyte found in associated method blank
E = Indicates value exceeds calibration range		N = Indicates presumptive evidence of a compound

### Report of Analysis

3.1  
3

Client Sample ID:	P93A-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-1	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	S21225.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
Run #2							

Run #	Initial Volume	Final Volume
Run #1	1020 ml	1.0 ml
Run #2		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	9.8	0.75	ug/l	"UJ"
95-57-8	2-Chlorophenol	ND	4.9	0.67	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	9.8	0.56	ug/l	
120-83-2	2,4-Dichlorophenol	ND	9.8	0.68	ug/l	
105-67-9	2,4-Dimethylphenol	ND	9.8	2.1	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	9.8	4.9	ug/l	
95-48-7	2-Methylphenol	ND	9.8	0.47	ug/l	
	3&4-Methylphenol	64.0	9.8	0.62	ug/l	
88-75-5	2-Nitrophenol	ND	9.8	0.65	ug/l	
100-02-7	4-Nitrophenol	ND	20	4.9	ug/l	
87-86-5	Pentachlorophenol	ND	9.8	3.2	ug/l	
108-95-2	Phenol	172	4.9	2.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	9.8	0.39	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	9.8	0.37	ug/l	
83-32-9	Acenaphthene	ND	4.9	0.33	ug/l	
208-96-8	Acenaphthylene	ND	4.9	1.2	ug/l	
62-53-3	Aniline	ND	9.8	0.45	ug/l	
120-12-7	Anthracene	ND	4.9	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	4.9	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	4.9	0.22	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	4.9	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	4.9	0.60	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	4.9	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	4.9	0.31	ug/l	
85-68-7	Butyl benzyl phthalate	ND	4.9	0.40	ug/l	
91-58-7	2-Chloronaphthalene	ND	4.9	0.30	ug/l	
106-47-8	4-Chloroaniline	ND	9.8	0.56	ug/l	"UJ"
218-01-9	Chrysene	ND	4.9	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	4.9	0.34	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	4.9	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	4.9	0.20	ug/l	

ND = Not detected    MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

3.1  
3

Client Sample ID:	P93A-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-1	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	4.9	0.60	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	9.8	1.2	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	9.8	0.33	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	4.9	2.5	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	4.9	0.24	ug/l	
132-64-9	Dibenzofuran	ND	4.9	0.31	ug/l	
84-74-2	Di-n-butyl phthalate	ND	4.9	0.33	ug/l	
117-84-0	Di-n-octyl phthalate	ND	4.9	0.33	ug/l	
84-66-2	Diethyl phthalate	<del>1.4</del> 0.0ND	4.9	0.60	ug/l	"u"
131-11-3	Dimethyl phthalate	ND	4.9	1.2	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.48	ug/l	
206-44-0	Fluoranthene	ND	4.9	0.21	ug/l	
86-73-7	Fluorene	0.32	4.9	0.29	ug/l	J
118-74-1	Hexachlorobenzene	ND	4.9	0.15	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	9.8	2.5	ug/l	"u"
67-72-1	Hexachloroethane	ND	4.9	0.42	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	4.9	0.28	ug/l	
78-59-1	Isophorone	ND	4.9	0.46	ug/l	
91-57-6	2-Methylnaphthalene	25.4	4.9	0.30	ug/l	
88-74-4	2-Nitroaniline	ND	9.8	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	9.8	0.32	ug/l	"u"
100-01-6	4-Nitroaniline	ND	9.8	0.33	ug/l	
91-20-3	Naphthalene	80.3	4.9	0.32	ug/l	
98-95-3	Nitrobenzene	ND	4.9	0.30	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	4.9	0.40	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	4.9	0.60	ug/l	
85-01-8	Phenanthrene	0.40	4.9	0.25	ug/l	J
129-00-0	Pyrene	ND	4.9	0.24	ug/l	
110-86-1	Pyridine	ND	9.8	0.49	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	44%		15-110%
4165-62-2	Phenol-d5	27%		15-110%
118-79-6	2,4,6-Tribromophenol	92%		15-110%
4165-60-0	Nitrobenzene-d5	82%		30-130%
321-60-8	2-Fluorobiphenyl	79%		30-130%
1718-51-0	Terphenyl-d14	80%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3

Client Sample ID:	P93B-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-2	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51522.D	1	02/03/11	TD	n/a	n/a	MSE2175
Run #2	E51578.D	500	02/05/11	TD	n/a	n/a	MSE2177

	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	105000 <sup>a</sup>	250	180	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	0.58	5.0	0.53	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	0.77	2.0	0.76	ug/l	J
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	1.4	2.0	0.81	ug/l	J
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis

Client Sample ID:	P93B-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-2	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropane	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	10.4	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
74-88-4	Iodomethane	ND	5.0	0.47	ug/l	
98-82-8	Isopropylbenzene	10.8	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	8.8	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	11.0	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	32.1	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	5.2	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	1.6	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	J "uj"
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	55.5	1.0	0.62	ug/l	
95-47-6	o-Xylene	9.2	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	109%	116%	70-130%
2037-26-5	Toluene-D8	110%	112%	70-130%
460-00-4	4-Bromofluorobenzene	111%	109%	70-130%

(a) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit      J = Indicates an estimated value  
 RL = Reporting Limit      B = Indicates analyte found in associated method blank  
 E = Indicates value exceeds calibration range      N = Indicates presumptive evidence of a compound



Report of Analysis

3.2  
3

Client Sample ID: P93B-ROX_012611	Date Sampled: 01/26/11
Lab Sample ID: M97427-2	Date Received: 01/27/11
Matrix: AQ - Ground Water	Percent Solids: n/a
Method: SW846 8270C SW846 3510C	
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21226.D	1	02/02/11	PR	01/28/11	OP23982	MSS888

Run #1	Initial Volume	Final Volume
Run #2	940 ml	1.0 ml

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	11	0.82	ug/l	"uJ"
95-57-8	2-Chlorophenol	ND	5.3	0.73	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	11	0.61	ug/l	
120-83-2	2,4-Dichlorophenol	ND	11	0.74	ug/l	
105-67-9	2,4-Dimethylphenol	ND	11	2.3	ug/l	
51-28-5	2,4-Dinitrophenol	ND	21	2.7	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	11	5.3	ug/l	
95-48-7	2-Methylphenol	ND	11	0.51	ug/l	
	3&4-Methylphenol	ND	11	0.67	ug/l	
88-75-5	2-Nitrophenol	ND	11	0.70	ug/l	
100-02-7	4-Nitrophenol	ND	21	5.3	ug/l	
87-86-5	Pentachlorophenol	ND	11	3.5	ug/l	
108-95-2	Phenol	106	5.3	2.2	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	11	0.43	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	11	0.40	ug/l	
83-32-9	Acenaphthene	ND	5.3	0.36	ug/l	
208-96-8	Acenaphthylene	ND	5.3	1.3	ug/l	
62-53-3	Aniline	ND	11	0.48	ug/l	
120-12-7	Anthracene	ND	5.3	0.29	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.3	0.29	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.3	0.24	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.3	0.29	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.3	0.65	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.3	0.31	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.3	0.34	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.3	0.43	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.3	0.32	ug/l	
106-47-8	4-Chloroaniline	ND	11	0.61	ug/l	"uJ"
218-01-9	Chrysene	ND	5.3	0.24	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.3	0.37	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.3	0.25	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.3	0.22	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

### Report of Analysis

3.2  
3

Client Sample ID:	P93B-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-2	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.3	0.65	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	11	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	11	0.36	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.3	2.7	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.3	0.26	ug/l	
132-64-9	Dibenzofuran	ND	5.3	0.34	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.3	0.36	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.3	0.36	ug/l	
84-66-2	Diethyl phthalate	0.860.0ND	5.3	0.65	ug/l	"u"
131-11-3	Dimethyl phthalate	ND	5.3	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.1	0.52	ug/l	
206-44-0	Fluoranthene	ND	5.3	0.23	ug/l	
86-73-7	Fluorene	ND	5.3	0.31	ug/l	
118-74-1	Hexachlorobenzene	ND	5.3	0.17	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	11	2.7	ug/l	"u"
67-72-1	Hexachloroethane	ND	5.3	0.46	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.3	0.31	ug/l	
78-59-1	Isophorone	ND	5.3	0.50	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.3	0.33	ug/l	
88-74-4	2-Nitroaniline	ND	11	0.36	ug/l	
99-09-2	3-Nitroaniline	0.69	11	0.34	ug/l	"J"
100-01-6	4-Nitroaniline	ND	11	0.36	ug/l	
91-20-3	Naphthalene	1.1	5.3	0.35	ug/l	J
98-95-3	Nitrobenzene	ND	5.3	0.32	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.3	0.43	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.3	0.65	ug/l	
85-01-8	Phenanthrene	ND	5.3	0.27	ug/l	
129-00-0	Pyrene	ND	5.3	0.26	ug/l	
110-86-1	Pyridine	ND	11	0.53	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	45%		15-110%
4165-62-2	Phenol-d5	28%		15-110%
118-79-6	2,4,6-Tribromophenol	97%		15-110%
4165-60-0	Nitrobenzene-d5	87%		30-130%
321-60-8	2-Fluorobiphenyl	82%		30-130%
1718-51-0	Terphenyl-d14	79%		30-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	P93C-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-3	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B	Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	E51526.D	1	02/03/11	TD	n/a	n/a	MSE2175
Run #2	E51581.D	500	02/05/11	TD	n/a	n/a	MSE2177

Run #	Purge Volume
Run #1	5.0 ml
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	86500 <sup>a</sup>	250	180	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	0.56	5.0	0.53	ug/l	J
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	P93C-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-3	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropane	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	17.5	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
74-88-4	Iodomethane	ND	5.0	0.47	ug/l	
98-82-8	Isopropylbenzene	1.9	5.0	0.51	ug/l	J
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	1.4	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	1.3	5.0	0.43	ug/l	J
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	6.7	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	2.5	5.0	0.62	ug/l	J
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	u u u
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	5.1	1.0	0.62	ug/l	
95-47-6	o-Xylene	3.5	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	103%	110%	70-130%
2037-26-5	Toluene-D8	106%	113%	70-130%
460-00-4	4-Bromofluorobenzene	122%	105%	70-130%

(a) Result is from Run# 2

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

3

Client Sample ID:	P93C-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-3	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	S21227.D	1	02/02/11	PR	01/28/11	OP23982	MSS888

	Initial Volume	Final Volume
Run #1	980 ml	1.0 ml
Run #2		

## ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.79	ug/l	"uJ"
95-57-8	2-Chlorophenol	ND	5.1	0.70	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.58	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.71	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.6	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.1	ug/l	
95-48-7	2-Methylphenol	ND	10	0.49	ug/l	
	3&4-Methylphenol	ND	10	0.64	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.67	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.1	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.4	ug/l	
108-95-2	Phenol	16.6	5.1	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.41	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.1	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.1	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.1	0.28	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.1	0.28	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.1	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.1	0.28	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.1	0.62	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.1	0.30	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.1	0.33	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.1	0.42	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.1	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.59	ug/l	"uJ"
218-01-9	Chrysene	ND	5.1	0.23	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.1	0.36	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.1	0.24	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.1	0.21	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

Report of Analysis



Client Sample ID:	P93C-ROX_012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-3	Date Received:	01/27/11
Matrix:	AQ - Ground Water	Percent Solids:	n/a
Method:	SW846 8270C SW846 3510C		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

ABN PPL List

CAS No.	Compound	Result	RL	MDL	Units	Q
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.1	0.62	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.1	2.6	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	5.1	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.1	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.1	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.1	0.34	ug/l	
84-66-2	Diethyl phthalate	<del>0.97</del> <sup>0.0</sup> ND	5.1	0.62	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.1	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.50	ug/l	
206-44-0	Fluoranthene	ND	5.1	0.22	ug/l	
86-73-7	Fluorene	ND	5.1	0.30	ug/l	
118-74-1	Hexachlorobenzene	ND	5.1	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.6	ug/l	* u5"
67-72-1	Hexachloroethane	ND	5.1	0.44	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.1	0.29	ug/l	
78-59-1	Isophorone	ND	5.1	0.48	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.1	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.34	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.33	ug/l	* u5"
100-01-6	4-Nitroaniline	ND	10	0.34	ug/l	
91-20-3	Naphthalene	ND	5.1	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.1	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.1	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.1	0.62	ug/l	
85-01-8	Phenanthrene	ND	5.1	0.26	ug/l	
129-00-0	Pyrene	ND	5.1	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.51	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	40%		15-110%
4165-62-2	Phenol-d5	25%		15-110%
118-79-6	2,4,6-Tribromophenol	88%		15-110%
4165-60-0	Nitrobenzene-d5	83%		30-130%
321-60-8	2-Fluorobiphenyl	78%		30-130%
1718-51-0	Terphenyl-d14	75%		30-130%

ND = Not detected MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis

Client Sample ID:	TB-ROX-012611	Date Sampled:	01/26/11
Lab Sample ID:	M97427-4	Date Received:	01/27/11
Matrix:	AQ - Trip Blank Water	Percent Solids:	n/a
Method:	SW846 8260B		
Project:	URSMOSTL:97216640 170 East Rand Avenue Hartford, IL		

Run #1	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #2	E51521.D	1	02/03/11	TD	n/a	n/a	MSE2175

Run #1	Purge Volume
Run #2	5.0 ml

## VOA 8260 List

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound

## Report of Analysis



<b>Client Sample ID:</b> TB-ROX-012611 <b>Lab Sample ID:</b> M97427-4 <b>Matrix:</b> AQ - Trip Blank Water <b>Method:</b> SW846 8260B <b>Project:</b> URSMOSTL:97216640 170 East Rand Avenue Hartford, IL	<b>Date Sampled:</b> 01/26/11 <b>Date Received:</b> 01/27/11 <b>Percent Solids:</b> n/a
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**VOA 8260 List**

CAS No.	Compound	Result	RL	MDL	Units	Q
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
74-88-4	Iodomethane	ND	5.0	0.47	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	4.7	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
1868-53-7	Dibromofluoromethane	115%		70-130%
2037-26-5	Toluene-D8	113%		70-130%
460-00-4	4-Bromofluorobenzene	103%		70-130%

ND = Not detected      MDL - Method Detection Limit  
 RL = Reporting Limit  
 E = Indicates value exceeds calibration range

J = Indicates an estimated value  
 B = Indicates analyte found in associated method blank  
 N = Indicates presumptive evidence of a compound



## Misc. Forms

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## Custody Documents and Other Forms

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Includes the following where applicable:

- Certification Exceptions
- Certification Exceptions (IL)
- Chain of Custody
- Sample Tracking Chronicle
- Internal Chain of Custody



# Shell Oil Products Chain Of Custody Record

LAB (LOCATION)  
 RORO  
 CALCESTR  
 OTHER (Laboratory, MA 01752, 2508-361-6200)  
 Lab Vendor #

Please Check Appropriate Box:  
 DIV. SERVICES  
 MOTIVA RETAIL  
 SHELL RETAIL  
 MOTIVA SOMCH  
 CONSULTANT  
 LUBES  
 SHELL PIPELINE  
 OTHER

Print Bill To Contact Name: WENDY PENNINGTON  
 INCIDENT # (ENV SERVICES) 97210840  
 CHECK IF NO INCIDENT # APPLIES  
 DATE: 01/26/11  
 PAGE: 1 of 1

LABORATORY: LIRS CORPORATION  
 ADDRESS: 1001 HIGHLANDS PLAZA DRIVE WEST - SUITE 300, ST. LOUIS, MO 63110  
 PHONE: 314-743-4166 or 341-452-8628 314-429-0482  
 FAX: 314-743-4166  
 170 EAST RAND AVENUE - HARTFORD, CT 06103  
 PHONE: 860-234-1100  
 FAX: 860-234-1100

LABORATORY: Rosana Quarterly / 21582531.00003  
 Lab Vendor #  
 N. Salem / K. Huust  
 REQUESTED ANALYSIS

DELIVERABLES:  LEVEL 1  LEVEL 2  LEVEL 3  LEVEL 4  OTHER (SPECIFY) EDO  
 SPECIAL INSTRUCTIONS OR NOTES:  
 SHELL CONTRACT RATE APPLIES  
 STATE REIMBURSEMENT RATE APPLIES  
 EDO NOT NEEDED  
 ACCEPTANCE VERIFICATION REQUESTED  
 PROVIDE LENO USE

LAB USE ONLY	Field Sample Identification	SAMPLING		DATE	TIME	MATERIAL	PRESERVATIVE					VOL. OF CONT.	VOC 8280B	SYOC 8270C	PID (ppm)	FIELD NOTES: TEMPERATURE ON RECEIPT C  Container PID Readings or Laboratory Notes
		DATE	TIME				MCL	MNO	MCHO	MVE	OTHER					
1	P93A-Rox-012611	1/26/11	150	Water	3	2										
2	P93B-Rox-012611	1/26/11	1055		3	2										
3	P93B-Rox-012611MS	1/26/11	1055		3	2										
4	P93B-Rox-012611MS	1/26/11	1055		3	2										
5	P93C-Rox-012611	1/26/11	1120		3	2										
6	P93D-Rox-012611	1/26/11			3	2										
7	TB-Rox-012611	1/26/11			2											17C, 182

Subscribed by: <i>Salem</i>	Received by: <i>FedEx</i>	Date: 1/26/11	Time: 1500
Subscribed by: <i>FedEx</i>	Received by: <i>Sam Barry</i>	Date: 1/27/11	Time: 11:00
Subscribed by:	Received by:	Date:	Time:

1-4/1-99

4.1  
4



# Accutest Laboratories Sample Receipt Summary

Accutest Job Number: M97427 Client: URS Immediate Client Services Action Required: No  
 Date / Time Received: 1/27/2011 Delivery Method: \_\_\_\_\_ Client Service Action Required at LogIn: No  
 Project: 170 EAST RAND AVE HARTFORD No. Coolers: 2 Airbill #s: N/A

**Cooler Security** Y or N Y or N  
 1. Custody Seals Present:   3. COC Present:    
 2. Custody Seals Intact:   4. SmpI Dates/Time OK

**Cooler Temperature** Y or N  
 1. Temp critena achieved:    
 2. Cooler temp verification: Infrared gun  
 3. Cooler media: Ice (bag)

**Quality Control Preservatio** Y or N N/A  
 1. Trip Blank present / cooler:     
 2. Trip Blank listed on COC:     
 3. Samples preserved properly:     
 4. VOCs headspace free:

**Sample Integrity - Documentation** Y or N  
 1. Sample labels present on bottles:    
 2. Container labeling complete:    
 3. Sample container label / COC agree:

**Sample Integrity - Condition** Y or N  
 1. Sample recvd within HT:    
 2. All containers accounted for:    
 3. Condition of sample: Intact

**Sample Integrity - Instructions** Y or N N/A  
 1. Analysis requested is clear:    
 2. Bottles received for unspecified tests:    
 3. Sufficient volume recvd for analysis:    
 4. Compositing instructions clear:     
 5. Filtering instructions clear:

Comments

4.1  
4

### Internal Sample Tracking Chronicle

Shell Oil

Job No: M97427

URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Project No: SAP#340061

4.2  
4

Sample Number	Method	Analyzed	By	Prepped	By	Test Codes
M97427-1 Collected: 26-JAN-11 11:50 By: NSKH Received: 27-JAN-11 By: JB P93A-ROX 012611						
M97427-1	SW846 8270C	02-FEB-11 18:19	PR	28-JAN-11 AJ		AB8270PPL
M97427-1	SW846 8260B	03-FEB-11 14:37	TD			V8260STD
M97427-1	SW846 8260B	05-FEB-11 04:18	TD			V8260STD
M97427-2 Collected: 26-JAN-11 10:55 By: NSKH Received: 27-JAN-11 By: JB P93B-ROX 012611						
M97427-2	SW846 8270C	02-FEB-11 18:46	PR	28-JAN-11 AJ		AB8270PPL
M97427-2	SW846 8260B	03-FEB-11 13:13	TD			V8260STD
M97427-2	SW846 8260B	05-FEB-11 02:22	TD			V8260STD
M97427-3 Collected: 26-JAN-11 11:20 By: NSKH Received: 27-JAN-11 By: JB P93C-ROX 012611						
M97427-3	SW846 8270C	02-FEB-11 19:13	PR	28-JAN-11 AJ		AB8270PPL
M97427-3	SW846 8260B	03-FEB-11 15:00	TD			V8260STD
M97427-3	SW846 8260B	05-FEB-11 03:49	TD			V8260STD
M97427-4 Collected: 26-JAN-11 00:00 By: NSKH Received: 27-JAN-11 By: JB TB-ROX-012611						
M97427-4	SW846 8260B	03-FEB-11 12:44	TD			V8260STD

# Accutest Internal Chain of Custody

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/27/11

4.3  
**4**

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97427-1.1	Walk In Ref #22	Bijan Jafari	01/28/11 11:08	Retrieve from Storage
M97427-1.1	Bijan Jafari		02/07/11 10:33	Depleted
M97427-1.4	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-1.4	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument
M97427-1.4	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-1.4	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage
M97427-1.5	VOC Ref #1	Tamis Dudo	02/04/11 15:37	Retrieve from Storage
M97427-1.5	Tamis Dudo	GCMSE	02/04/11 15:37	Load on Instrument
M97427-1.5	GCMSE	Tamis Dudo	02/07/11 08:45	Unload from Instrument
M97427-1.5	Tamis Dudo	VOC Ref #1	02/08/11 15:31	Return to Storage
M97427-2.1	Walk In Ref #22	Bijan Jafari	01/28/11 11:08	Retrieve from Storage
M97427-2.1	Bijan Jafari		02/07/11 10:33	Depleted
M97427-2.4	Walk In Ref #22	Bijan Jafari	01/28/11 11:08	Retrieve from Storage
M97427-2.4	Bijan Jafari		02/07/11 10:33	Depleted
M97427-2.5	Walk In Ref #22	Bijan Jafari	01/28/11 11:08	Retrieve from Storage
M97427-2.5	Bijan Jafari		02/07/11 10:33	Depleted
M97427-2.10	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-2.10	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument
M97427-2.10	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-2.10	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage
M97427-2.11	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-2.11	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument
M97427-2.11	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-2.11	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage
M97427-2.13	VOC Ref #1	Tamis Dudo	02/04/11 15:37	Retrieve from Storage
M97427-2.13	Tamis Dudo	GCMSE	02/04/11 15:37	Load on Instrument
M97427-2.13	GCMSE	Tamis Dudo	02/07/11 08:45	Unload from Instrument
M97427-2.13	Tamis Dudo	VOC Ref #1	02/08/11 15:31	Return to Storage
M97427-2.14	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-2.14	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument
M97427-2.14	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-2.14	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage
M97427-2.15	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-2.15	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument

# Accutest Internal Chain of Custody

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL  
 Received: 01/27/11

4.3  
**4**

Sample.Bottle Number	Transfer FROM	Transfer TO	Date/Time	Reason
M97427-2.15	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-2.15	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage
M97427-3.1	Walk In Ref #22	Bijan Jafari	01/28/11 14:10	Retrieve from Storage
M97427-3.1	Bijan Jafari		02/07/11 10:33	Depleted
M97427-3.4	VOC Ref #1	Tamis Dudo	02/04/11 15:37	Retrieve from Storage
M97427-3.4	Tamis Dudo	GCMSE	02/04/11 15:37	Load on Instrument
M97427-3.4	GCMSE	Tamis Dudo	02/07/11 08:45	Unload from Instrument
M97427-3.4	Tamis Dudo	VOC Ref #1	02/08/11 15:31	Return to Storage
M97427-3.5	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-3.5	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument
M97427-3.5	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-3.5	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage
M97427-4.1	VOC Ref #1	Tamis Dudo	02/03/11 11:50	Retrieve from Storage
M97427-4.1	Tamis Dudo	GCMSE	02/03/11 11:50	Load on Instrument
M97427-4.1	GCMSE	Tamis Dudo	02/04/11 08:57	Unload from Instrument
M97427-4.1	Tamis Dudo	VOC Ref #1	02/04/11 11:04	Return to Storage

GC/MS Volatiles

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QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2175-MB	E51520.D	1	02/03/11	TD	n/a	n/a	MSE2175

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

CAS No.	Compound	Result	RL	MDL	Units	Q
67-64-1	Acetone	ND	5.0	4.6	ug/l	
71-43-2	Benzene	ND	0.50	0.35	ug/l	
108-86-1	Bromobenzene	ND	5.0	0.52	ug/l	
74-97-5	Bromochloromethane	ND	5.0	0.91	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	0.62	ug/l	
75-25-2	Bromoform	ND	1.0	0.73	ug/l	
74-83-9	Bromomethane	ND	2.0	0.95	ug/l	
78-93-3	2-Butanone (MEK)	ND	5.0	2.1	ug/l	
104-51-8	n-Butylbenzene	ND	5.0	0.49	ug/l	
135-98-8	sec-Butylbenzene	ND	5.0	0.37	ug/l	
98-06-6	tert-Butylbenzene	ND	5.0	0.53	ug/l	
75-15-0	Carbon disulfide	ND	5.0	0.35	ug/l	
56-23-5	Carbon tetrachloride	ND	1.0	0.42	ug/l	
108-90-7	Chlorobenzene	ND	1.0	0.61	ug/l	
75-00-3	Chloroethane	ND	2.0	0.76	ug/l	
67-66-3	Chloroform	ND	1.0	0.72	ug/l	
74-87-3	Chloromethane	ND	2.0	0.81	ug/l	
95-49-8	o-Chlorotoluene	ND	5.0	0.58	ug/l	
106-43-4	p-Chlorotoluene	ND	5.0	0.67	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	5.0	1.3	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	0.86	ug/l	
95-50-1	1,2-Dichlorobenzene	ND	1.0	0.74	ug/l	
541-73-1	1,3-Dichlorobenzene	ND	1.0	0.77	ug/l	
106-46-7	1,4-Dichlorobenzene	ND	1.0	0.81	ug/l	
75-71-8	Dichlorodifluoromethane	ND	2.0	0.61	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	0.63	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	0.74	ug/l	
75-35-4	1,1-Dichloroethene	ND	1.0	0.70	ug/l	
156-59-2	cis-1,2-Dichloroethene	ND	1.0	0.66	ug/l	
156-60-5	trans-1,2-Dichloroethene	ND	1.0	0.74	ug/l	
78-87-5	1,2-Dichloropropane	ND	2.0	0.83	ug/l	
142-28-9	1,3-Dichloropropane	ND	5.0	0.73	ug/l	
594-20-7	2,2-Dichloropropane	ND	5.0	0.44	ug/l	
563-58-6	1,1-Dichloropropene	ND	5.0	0.34	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.50	0.23	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.50	0.23	ug/l	

5.1.1  
5



# Method Blank Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2175-MB	E51520.D	1	02/03/11	TD	n/a	n/a	MSE2175

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

CAS No.	Compound	Result	RL	MDL	Units	Q
100-41-4	Ethylbenzene	ND	1.0	0.61	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	0.56	ug/l	
74-88-4	Iodomethane	ND	5.0	0.47	ug/l	
98-82-8	Isopropylbenzene	ND	5.0	0.51	ug/l	
99-87-6	p-Isopropyltoluene	ND	5.0	0.45	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	0.54	ug/l	
74-95-3	Methylene bromide	ND	5.0	0.94	ug/l	
75-09-2	Methylene chloride	ND	2.0	0.75	ug/l	
103-65-1	n-Propylbenzene	ND	5.0	0.43	ug/l	
100-42-5	Styrene	ND	5.0	0.68	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	5.0	0.64	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	1.0	0.89	ug/l	
127-18-4	Tetrachloroethene	ND	1.0	0.39	ug/l	
108-88-3	Toluene	ND	1.0	0.74	ug/l	
87-61-6	1,2,3-Trichlorobenzene	ND	5.0	1.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	0.57	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	0.35	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	0.72	ug/l	
79-01-6	Trichloroethene	ND	1.0	0.49	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	0.47	ug/l	
96-18-4	1,2,3-Trichloropropane	ND	5.0	0.61	ug/l	
95-63-6	1,2,4-Trimethylbenzene	ND	5.0	0.62	ug/l	
108-67-8	1,3,5-Trimethylbenzene	ND	5.0	0.51	ug/l	
108-05-4	Vinyl Acetate	ND	5.0	0.51	ug/l	
75-01-4	Vinyl chloride	ND	1.0	0.86	ug/l	
	m,p-Xylene	ND	1.0	0.62	ug/l	
95-47-6	o-Xylene	ND	1.0	0.56	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	119%	70-130%
2037-26-5	Toluene-D8	116%	70-130%
460-00-4	4-Bromofluorobenzene	110%	70-130%

5.1.1  
5

## Method Blank Summary

Page 1 of 1

Job Number: M97427

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2177-MB	E51577.D	1	02/05/11	TD	n/a	n/a	MSE2177

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3

CAS No.	Compound	Result	RL	MDL	Units	Q
71-43-2	Benzene	ND	0.50	0.35	ug/l	

CAS No.	Surrogate Recoveries		Limits
1868-53-7	Dibromofluoromethane	110%	70-130%
2037-26-5	Toluene-D8	114%	70-130%
460-00-4	4-Bromofluorobenzene	112%	70-130%

5.1.2  
5

# Blank Spike Summary

Job Number: M97427  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2175-BS	E51518A.D	1	02/03/11	TD	n/a	n/a	MSE2175

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
67-64-1	Acetone	50	54.4	109	70-130
71-43-2	Benzene	50	57.9	116	70-130
108-86-1	Bromobenzene	50	53.4	107	70-130
74-97-5	Bromochloromethane	50	54.7	109	70-130
75-27-4	Bromodichloromethane	50	56.6	113	70-130
75-25-2	Bromoform	50	49.6	99	70-130
74-83-9	Bromomethane	50	56.1	112	70-130
78-93-3	2-Butanone (MEK)	50	45.6	91	70-130
104-51-8	n-Butylbenzene	50	59.9	120	70-130
135-98-8	sec-Butylbenzene	50	58.0	116	70-130
98-06-6	tert-Butylbenzene	50	59.6	119	70-130
75-15-0	Carbon disulfide	50	61.9	124	70-130
56-23-5	Carbon tetrachloride	50	61.8	124	70-130
108-90-7	Chlorobenzene	50	54.1	108	70-130
75-00-3	Chloroethane	50	58.7	117	70-130
67-66-3	Chloroform	50	58.6	117	70-130
74-87-3	Chloromethane	50	59.4	119	70-130
95-49-8	o-Chlorotoluene	50	57.4	115	70-130
106-43-4	p-Chlorotoluene	50	58.6	117	70-130
96-12-8	1,2-Dibromo-3-chloropropane	50	43.3	87	70-130
124-48-1	Dibromochloromethane	50	51.7	103	70-130
95-50-1	1,2-Dichlorobenzene	50	53.1	106	70-130
541-73-1	1,3-Dichlorobenzene	50	51.8	104	70-130
106-46-7	1,4-Dichlorobenzene	50	56.2	112	70-130
75-71-8	Dichlorodifluoromethane	50	70.8	142* a	70-130
75-34-3	1,1-Dichloroethane	50	59.0	118	70-130
107-06-2	1,2-Dichloroethane	50	53.7	107	70-130
75-35-4	1,1-Dichloroethene	50	56.6	113	70-130
156-59-2	cis-1,2-Dichloroethene	50	50.8	102	70-130
156-60-5	trans-1,2-Dichloroethene	50	53.4	107	70-130
78-87-5	1,2-Dichloropropane	50	54.8	110	70-130
142-28-9	1,3-Dichloropropane	50	48.9	98	70-130
594-20-7	2,2-Dichloropropane	50	66.4	133* a	70-130
563-58-6	1,1-Dichloropropene	50	56.5	113	70-130
10061-01-5	cis-1,3-Dichloropropene	50	55.7	111	70-130
10061-02-6	trans-1,3-Dichloropropene	50	57.2	114	70-130

5.2.1  
5

# Blank Spike Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2175-BS	E51518A.D	1	02/03/11	TD	n/a	n/a	MSE2175

5.2.1  
**5**

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
100-41-4	Ethylbenzene	50	53.2	106	70-130
87-68-3	Hexachlorobutadiene	50	66.2	132* <sup>a</sup>	70-130
74-88-4	Iodomethane	50	59.9	120	70-130
98-82-8	Isopropylbenzene	50	64.8	130	70-130
99-87-6	p-Isopropyltoluene	50	60.5	121	70-130
1634-04-4	Methyl Tert Butyl Ether	50	43.0	86	70-130
74-95-3	Methylene bromide	50	53.4	107	70-130
75-09-2	Methylene chloride	50	53.5	107	70-130
103-65-1	n-Propylbenzene	50	56.0	112	70-130
100-42-5	Styrene	50	48.8	98	70-130
630-20-6	1,1,1,2-Tetrachloroethane	50	55.4	111	70-130
79-34-5	1,1,2,2-Tetrachloroethane	50	50.1	100	70-130
127-18-4	Tetrachloroethene	50	56.7	113	70-130
108-88-3	Toluene	50	58.5	117	70-130
87-61-6	1,2,3-Trichlorobenzene	50	46.8	94	70-130
120-82-1	1,2,4-Trichlorobenzene	50	50.6	101	70-130
71-55-6	1,1,1-Trichloroethane	50	58.8	118	70-130
79-00-5	1,1,2-Trichloroethane	50	51.5	103	70-130
79-01-6	Trichloroethene	50	57.9	116	70-130
75-69-4	Trichlorofluoromethane	50	61.9	124	70-130
96-18-4	1,2,3-Trichloropropane	50	46.4	93	70-130
95-63-6	1,2,4-Trimethylbenzene	50	56.7	113	70-130
108-67-8	1,3,5-Trimethylbenzene	50	57.0	114	70-130
108-05-4	Vinyl Acetate	50	33.0	66* <sup>a</sup>	70-130
75-01-4	Vinyl chloride	50	58.8	118	70-130
	m,p-Xylene	100	110	110	70-130
95-47-6	o-Xylene	50	56.1	112	70-130

CAS No.	Surrogate Recoveries	BSP	Limits
1868-53-7	Dibromofluoromethane	113%	70-130%
2037-26-5	Toluene-D8	113%	70-130%
460-00-4	4-Bromofluorobenzene	112%	70-130%

(a) Outside control limits. Blank Spike meets program technical requirements.

# Blank Spike/Blank Spike Duplicate Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
MSE2177-BS	E51574.D	1	02/05/11	TD	n/a	n/a	MSE2177
MSE2177-BSD	E51575.D	1	02/05/11	TD	n/a	n/a	MSE2177

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	57.1	114	57.3	115	0	70-130/25

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
1868-53-7	Dibromofluoromethane	114%	111%	70-130%
2037-26-5	Toluene-D8	112%	113%	70-130%
460-00-4	4-Bromofluorobenzene	113%	113%	70-130%

5.3.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97427-2MS	E51523.D	1	02/03/11	TD	n/a	n/a	MSE2175
M97427-2MSD	E51524.D	1	02/03/11	TD	n/a	n/a	MSE2175
M97427-2	E51522.D	1	02/03/11	TD	n/a	n/a	MSE2175

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

CAS No.	Compound	M97427-2 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	ND		50	782	1564* <sup>a</sup>	779	1558* <sup>a</sup>	0	70-130/30
71-43-2	Benzene	7220	E	50	6930	-580* <sup>b</sup>	7010	-420* <sup>b</sup>	1	70-130/30
108-86-1	Bromobenzene	ND		50	53.5	107	54.2	108	1	70-130/30
74-97-5	Bromochloromethane	ND		50	50.5	101	48.6	97	4	70-130/30
75-27-4	Bromodichloromethane	ND		50	48.1	96	47.4	95	1	70-130/30
75-25-2	Bromoform	ND		50	37.9	76	37.3	75	2	70-130/30
74-83-9	Bromomethane	ND		50	55.7	111	54.0	108	3	70-130/30
78-93-3	2-Butanone (MEK)	ND		50	39.0	78	46.3	93	17	70-130/30
104-51-8	n-Butylbenzene	ND		50	62.0	124	62.0	124	0	70-130/30
135-98-8	sec-Butylbenzene	ND		50	58.8	118	60.9	122	4	70-130/30
98-06-6	tert-Butylbenzene	0.58	J	50	62.6	124	64.4	128	3	70-130/30
75-15-0	Carbon disulfide	ND		50	53.0	106	51.3	103	3	70-130/30
56-23-5	Carbon tetrachloride	ND		50	45.5	91	45.2	90	1	70-130/30
108-90-7	Chlorobenzene	ND		50	54.5	109	54.1	108	1	70-130/30
75-00-3	Chloroethane	0.77	J	50	59.0	116	56.8	112	4	70-130/30
67-66-3	Chloroform	ND		50	55.3	111	54.1	108	2	70-130/30
74-87-3	Chloromethane	1.4	J	50	59.7	117	59.8	117	0	70-130/30
95-49-8	o-Chlorotoluene	ND		50	60.3	121	60.0	120	0	70-130/30
106-43-4	p-Chlorotoluene	ND		50	59.7	119	60.9	122	2	70-130/30
96-12-8	1,2-Dibromo-3-chloropropane	ND		50	44.1	88	38.1	76	15	70-130/30
124-48-1	Dibromochloromethane	ND		50	43.8	88	43.6	87	0	70-130/30
95-50-1	1,2-Dichlorobenzene	ND		50	54.5	109	54.4	109	0	70-130/30
541-73-1	1,3-Dichlorobenzene	ND		50	51.0	102	52.0	104	2	70-130/30
106-46-7	1,4-Dichlorobenzene	ND		50	55.9	112	55.5	111	1	70-130/30
75-71-8	Dichlorodifluoromethane	ND		50	70.7	141* <sup>a</sup>	69.4	139* <sup>a</sup>	2	70-130/30
75-34-3	1,1-Dichloroethane	ND		50	56.4	113	54.9	110	3	70-130/30
107-06-2	1,2-Dichloroethane	ND		50	49.0	98	47.5	95	3	70-130/30
75-35-4	1,1-Dichloroethene	ND		50	56.9	114	55.0	110	3	70-130/30
156-59-2	cis-1,2-Dichloroethene	ND		50	48.5	97	48.8	98	1	70-130/30
156-60-5	trans-1,2-Dichloroethene	ND		50	52.5	105	52.4	105	0	70-130/30
78-87-5	1,2-Dichloropropane	ND		50	58.9	118	54.1	108	8	70-130/30
142-28-9	1,3-Dichloropropane	ND		50	46.3	93	48.7	97	5	70-130/30
594-20-7	2,2-Dichloropropane	ND		50	59.3	119	58.0	116	2	70-130/30
563-58-6	1,1-Dichloropropene	ND		50	58.1	116	58.0	116	0	70-130/30
10061-01-5	cis-1,3-Dichloropropene	ND		50	52.4	105	51.8	104	1	70-130/30
10061-02-6	trans-1,3-Dichloropropene	ND		50	51.7	103	53.6	107	4	70-130/30

5.4.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97427-2MS	E51523.D	1	02/03/11	TD	n/a	n/a	MSE2175
M97427-2MSD	E51524.D	1	02/03/11	TD	n/a	n/a	MSE2175
M97427-2	E51522.D	1	02/03/11	TD	n/a	n/a	MSE2175

5.4.1  
5

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

CAS No.	Compound	M97427-2 ug/l	Spike Q	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD	
100-41-4	Ethylbenzene	10.4		50	66.8	113	67.6	114	1	70-130/30
87-68-3	Hexachlorobutadiene	ND		50	64.1	128	64.3	129	0	70-130/30
74-88-4	Iodomethane	ND		50	57.6	115	56.4	113	2	70-130/30
98-82-8	Isopropylbenzene	10.8		50	80.7	140* a	82.2	143* a	2	70-130/30
99-87-6	p-Isopropyltoluene	ND		50	60.7	121	61.8	124	2	70-130/30
1634-04-4	Methyl Tert Butyl Ether	8.8		50	51.8	86	54.1	91	4	70-130/30
74-95-3	Methylene bromide	ND		50	47.7	95	44.9	90	6	70-130/30
75-09-2	Methylene chloride	ND		50	51.8	104	49.7	99	4	70-130/30
103-65-1	n-Propylbenzene	11.0		50	70.6	119	71.8	122	2	70-130/30
100-42-5	Styrene	ND		50	34.7	69* a	38.7	77	11	70-130/30
630-20-6	1,1,1,2-Tetrachloroethane	ND		50	53.9	108	51.9	104	4	70-130/30
79-34-5	1,1,2,2-Tetrachloroethane	ND		50	47.7	95	46.8	94	2	70-130/30
127-18-4	Tetrachloroethene	ND		50	59.1	118	59.0	118	0	70-130/30
108-88-3	Toluene	32.1		50	86.5	109	85.4	107	1	70-130/30
87-61-6	1,2,3-Trichlorobenzene	ND		50	49.3	99	50.6	101	3	70-130/30
120-82-1	1,2,4-Trichlorobenzene	ND		50	52.5	105	54.6	109	4	70-130/30
71-55-6	1,1,1-Trichloroethane	ND		50	55.2	110	53.3	107	4	70-130/30
79-00-5	1,1,2-Trichloroethane	ND		50	45.5	91	46.4	93	2	70-130/30
79-01-6	Trichloroethene	ND		50	57.7	115	57.4	115	1	70-130/30
75-69-4	Trichlorofluoromethane	ND		50	60.1	120	59.4	119	1	70-130/30
96-18-4	1,2,3-Trichloropropane	ND		50	45.3	91	45.7	91	1	70-130/30
95-63-6	1,2,4-Trimethylbenzene	5.2		50	60.6	111	61.9	113	2	70-130/30
108-67-8	1,3,5-Trimethylbenzene	1.6	J	50	56.2	109	57.5	112	2	70-130/30
108-05-4	Vinyl Acetate	ND		50	39.1	78	40.0	80	2	70-130/30
75-01-4	Vinyl chloride	ND		50	58.1	116	58.9	118	1	70-130/30
	m,p-Xylene	55.5		100	163	108	162	107	1	70-130/30
95-47-6	o-Xylene	9.2		50	65.4	112	65.6	113	0	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97427-2	Limits
1868-53-7	Dibromofluoromethane	108%	105%	109%	70-130%
2037-26-5	Toluene-D8	113%	112%	110%	70-130%
460-00-4	4-Bromofluorobenzene	112%	114%	111%	70-130%

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97427-2MS	E51523.D	1	02/03/11	TD	n/a	n/a	MSE2175
M97427-2MSD	E51524.D	1	02/03/11	TD	n/a	n/a	MSE2175
M97427-2	E51522.D	1	02/03/11	TD	n/a	n/a	MSE2175

The QC reported here applies to the following samples:

Method: SW846 8260B

M97427-1, M97427-2, M97427-3, M97427-4

(b) Outside control limits due to high level in sample relative to spike amount.

5.4.1  
5



# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
M97427-2MS	E51579.D	500	02/05/11	TD	n/a	n/a	MSE2177
M97427-2MSD	E51580.D	500	02/05/11	TD	n/a	n/a	MSE2177
M97427-2	E51578.D	500	02/05/11	TD	n/a	n/a	MSE2177

5.4.2  
5

The QC reported here applies to the following samples: Method: SW846 8260B

M97427-1, M97427-2, M97427-3

CAS No.	Compound	M97427-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	105000	25000	79400	-102* <sup>a</sup>	80100	-100* <sup>a</sup>	1	70-130/30

CAS No.	Surrogate Recoveries	MS	MSD	M97427-2	Limits
1868-53-7	Dibromofluoromethane	112%	113%	116%	70-130%
2037-26-5	Toluene-D8	112%	113%	112%	70-130%
460-00-4	4-Bromofluorobenzene	109%	113%	109%	70-130%

(a) Outside control limits due to high level in sample relative to spike amount.

# Volatile Internal Standard Area Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSE2175-CC2152	Injection Date:	02/03/11
Lab File ID:	E51518.D	Injection Time:	11:21
Instrument ID:	GCMSE	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	225621	9.11	371787	9.98	171689	13.26	160050	15.81	32731	6.62
Upper Limit <sup>a</sup>	451242	9.61	743574	10.48	343378	13.76	320100	16.31	65462	7.12
Lower Limit <sup>b</sup>	112811	8.61	185894	9.48	85845	12.76	80025	15.31	16366	6.12

Lab	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
Sample ID	AREA		AREA		AREA		AREA		AREA	
MSE2175-BS	225621	9.11	371787	9.98	171689	13.26	160050	15.81	32731	6.62
MSE2175-MB	209335	9.11	339370	9.98	144720	13.26	133384	15.81	29869	6.62
M97427-4	213976	9.11	348175	9.99	146474	13.26	134226	15.81	27065	6.63
M97427-2	230405	9.12	386844	9.99	154498	13.26	143894	15.81	32874	6.62
M97427-2MS	237073	9.12	387782	10.00	163931	13.25	150702	15.81	46878	6.62
M97427-2MSD	242685	9.11	400007	9.99	170146	13.25	156234	15.81	47661	6.63
M97427-1	230705	9.13	335834	10.01	161474	13.26	172115	15.81	43328	6.63
M97427-3	226663	9.12	392259	9.99	145884	13.25	135455	15.82	36534	6.62

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.5.1  
5

# Volatile Internal Standard Area Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSE2177-CC2152	Injection Date:	02/05/11
Lab File ID:	E51573.D	Injection Time:	00:05
Instrument ID:	GCMSE	Method:	SW846 8260B

	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
	AREA		AREA		AREA		AREA		AREA	
Check Std	221949	9.12	374039	10.00	169275	13.26	162910	15.82	37436	6.63
Upper Limit <sup>a</sup>	443898	9.62	748078	10.50	338550	13.76	325820	16.32	74872	7.13
Lower Limit <sup>b</sup>	110975	8.62	187020	9.50	84638	12.76	81455	15.32	18718	6.13

Lab	IS 1	RT	IS 2	RT	IS 3	RT	IS 4	RT	IS 5	RT
Sample ID	AREA		AREA		AREA		AREA		AREA	
MSE2177-BS	220567	9.13	371256	10.00	167558	13.27	154623	15.82	37518	6.63
MSE2177-BSD	229888	9.12	384728	10.00	171656	13.26	157169	15.82	37211	6.63
MSE2177-MB	226863	9.12	364349	10.00	154537	13.26	142711	15.83	33155	6.64
M97427-2	220282	9.12	367781	10.00	157167	13.27	142049	15.82	34860	6.64
M97427-2MS	226121	9.13	378392	10.00	174061	13.27	162665	15.82	36250	6.64
M97427-2MSD	226994	9.12	375427	10.00	170876	13.27	156837	15.82	34086	6.64
M97427-3	223466	9.12	370550	10.00	159531	13.27	151002	15.83	35371	6.65
M97427-1	222572	9.12	370379	10.00	155483	13.26	142298	15.83	33011	6.64
ZZZZZZ	212784	9.12	344118	10.01	151418	13.27	146655	15.83	38968	6.64
ZZZZZZ	230737	9.12	375583	10.00	163533	13.27	155120	15.83	36890	6.64
ZZZZZZ	221395	9.12	365515	10.01	158679	13.27	149258	15.83	38011	6.63
ZZZZZZ	230360	9.12	382608	10.00	158769	13.26	146688	15.83	39941	6.64
ZZZZZZ	225458	9.12	377124	10.00	160491	13.27	156905	15.83	34695	6.64
ZZZZZZ	225025	9.12	380032	10.00	163565	13.26	150168	15.83	39520	6.64
ZZZZZZ	220450	9.13	368184	10.00	155266	13.27	147418	15.83	35967	6.64
ZZZZZZ	220388	9.13	361403	10.00	153882	13.27	144970	15.83	34378	6.64
ZZZZZZ	222468	9.12	365889	10.00	155917	13.26	143469	15.83	35716	6.65

- IS 1 = Pentafluorobenzene
- IS 2 = 1,4-Difluorobenzene
- IS 3 = Chlorobenzene-D5
- IS 4 = 1,4-Dichlorobenzene-d4
- IS 5 = Tert Butyl Alcohol-D9

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

5.5.2  
5

# Volatile Surrogate Recovery Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8260B	Matrix: AQ
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Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3
M97427-1	E51582.D	111.0	111.0	107.0
M97427-1	E51525.D	98.0	121.0	102.0
M97427-2	E51578.D	116.0	112.0	109.0
M97427-2	E51522.D	109.0	110.0	111.0
M97427-3	E51581.D	110.0	113.0	105.0
M97427-3	E51526.D	103.0	106.0	122.0
M97427-4	E51521.D	115.0	113.0	103.0
M97427-2MS	E51523.D	108.0	113.0	112.0
M97427-2MS	E51579.D	112.0	112.0	109.0
M97427-2MSD	E51524.D	105.0	112.0	114.0
M97427-2MSD	E51580.D	113.0	113.0	113.0
MSE2175-BS	E51518A.D	113.0	113.0	112.0
MSE2175-MB	E51520.D	119.0	116.0	110.0
MSE2177-BS	E51574.D	114.0	112.0	113.0
MSE2177-BSD	E51575.D	111.0	113.0	113.0
MSE2177-MB	E51577.D	110.0	114.0	112.0

<b>Surrogate Compounds</b>	<b>Recovery Limits</b>
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S1 = Dibromofluoromethane	70-130%
S2 = Toluene-D8	70-130%
S3 = 4-Bromofluorobenzene	70-130%

5.6.1  
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## GC/MS Semi-volatiles

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## QC Data Summaries

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Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries
- Internal Standard Area Summaries
- Surrogate Recovery Summaries

# Method Blank Summary

Job Number: M97427  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-MB	S21177.D	1	02/01/11	PR	01/28/11	OP23982	MSS887

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

CAS No.	Compound	Result	RL	MDL	Units	Q
65-85-0	Benzoic Acid	ND	10	0.77	ug/l	
95-57-8	2-Chlorophenol	ND	5.0	0.68	ug/l	
59-50-7	4-Chloro-3-methyl phenol	ND	10	0.57	ug/l	
120-83-2	2,4-Dichlorophenol	ND	10	0.69	ug/l	
105-67-9	2,4-Dimethylphenol	ND	10	2.2	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	2.5	ug/l	
534-52-1	4,6-Dinitro-o-cresol	ND	10	5.0	ug/l	
95-48-7	2-Methylphenol	ND	10	0.48	ug/l	
	3&4-Methylphenol	ND	10	0.63	ug/l	
88-75-5	2-Nitrophenol	ND	10	0.66	ug/l	
100-02-7	4-Nitrophenol	ND	20	5.0	ug/l	
87-86-5	Pentachlorophenol	ND	10	3.3	ug/l	
108-95-2	Phenol	ND	5.0	2.1	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	10	0.40	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	10	0.38	ug/l	
83-32-9	Acenaphthene	ND	5.0	0.34	ug/l	
208-96-8	Acenaphthylene	ND	5.0	1.3	ug/l	
62-53-3	Aniline	ND	10	0.46	ug/l	
120-12-7	Anthracene	ND	5.0	0.27	ug/l	
56-55-3	Benzo(a)anthracene	ND	5.0	0.27	ug/l	
50-32-8	Benzo(a)pyrene	ND	5.0	0.23	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	5.0	0.27	ug/l	
191-24-2	Benzo(g,h,i)perylene	ND	5.0	0.61	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	5.0	0.29	ug/l	
101-55-3	4-Bromophenyl phenyl ether	ND	5.0	0.32	ug/l	
85-68-7	Butyl benzyl phthalate	ND	5.0	0.41	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	0.31	ug/l	
106-47-8	4-Chloroaniline	ND	10	0.58	ug/l	
218-01-9	Chrysene	ND	5.0	0.22	ug/l	
111-91-1	bis(2-Chloroethoxy)methane	ND	5.0	0.35	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	0.23	ug/l	
108-60-1	bis(2-Chloroisopropyl)ether	ND	5.0	0.21	ug/l	
7005-72-3	4-Chlorophenyl phenyl ether	ND	5.0	0.61	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	10	1.3	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	10	0.34	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	5.0	2.5	ug/l	

# Method Blank Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-MB	S21177.D	1	02/01/11	PR	01/28/11	OP23982	MSS887

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

6.1.1  
**6**

CAS No.	Compound	Result	RL	MDL	Units	Q
53-70-3	Dibenzo(a,h)anthracene	ND	5.0	0.25	ug/l	
132-64-9	Dibenzofuran	ND	5.0	0.32	ug/l	
84-74-2	Di-n-butyl phthalate	ND	5.0	0.34	ug/l	
117-84-0	Di-n-octyl phthalate	ND	5.0	0.34	ug/l	
84-66-2	Diethyl phthalate	0.83	5.0	0.61	ug/l	J
131-11-3	Dimethyl phthalate	ND	5.0	1.3	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	2.0	0.49	ug/l	
206-44-0	Fluoranthene	ND	5.0	0.22	ug/l	
86-73-7	Fluorene	ND	5.0	0.29	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	0.16	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	2.5	ug/l	
67-72-1	Hexachloroethane	ND	5.0	0.43	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	5.0	0.29	ug/l	
78-59-1	Isophorone	ND	5.0	0.47	ug/l	
91-57-6	2-Methylnaphthalene	ND	5.0	0.31	ug/l	
88-74-4	2-Nitroaniline	ND	10	0.33	ug/l	
99-09-2	3-Nitroaniline	ND	10	0.32	ug/l	
100-01-6	4-Nitroaniline	ND	10	0.33	ug/l	
91-20-3	Naphthalene	ND	5.0	0.33	ug/l	
98-95-3	Nitrobenzene	ND	5.0	0.31	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	0.41	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	0.61	ug/l	
85-01-8	Phenanthrene	ND	5.0	0.26	ug/l	
129-00-0	Pyrene	ND	5.0	0.25	ug/l	
110-86-1	Pyridine	ND	10	0.50	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	36%	15-110%
4165-62-2	Phenol-d5	22%	15-110%
118-79-6	2,4,6-Tribromophenol	77%	15-110%
4165-60-0	Nitrobenzene-d5	70%	30-130%
321-60-8	2-Fluorobiphenyl	67%	30-130%
1718-51-0	Terphenyl-d14	76%	30-130%

# Blank Spike Summary

Job Number: M97427

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-BS	S21178.D	1	02/01/11	PR	01/28/11	OP23982	MSS887

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
65-85-0	Benzoic Acid	100	23.9	24* a	30-130
95-57-8	2-Chlorophenol	100	65.5	66	30-130
59-50-7	4-Chloro-3-methyl phenol	100	73.8	74	30-130
120-83-2	2,4-Dichlorophenol	100	75.6	76	30-130
105-67-9	2,4-Dimethylphenol	100	71.1	71	30-130
51-28-5	2,4-Dinitrophenol	100	77.9	78	30-130
534-52-1	4,6-Dinitro-o-cresol	100	76.8	77	30-130
95-48-7	2-Methylphenol	100	58.2	58	30-130
	3&4-Methylphenol	200	107	54	30-130
88-75-5	2-Nitrophenol	100	78.0	78	30-130
100-02-7	4-Nitrophenol	100	39.2	39	30-130
87-86-5	Pentachlorophenol	100	67.8	68	30-130
108-95-2	Phenol	100	25.6	26* a	30-130
95-95-4	2,4,5-Trichlorophenol	100	71.5	72	30-130
88-06-2	2,4,6-Trichlorophenol	100	73.0	73	30-130
83-32-9	Acenaphthene	50	32.0	64	40-140
208-96-8	Acenaphthylene	50	27.8	56	40-140
62-53-3	Aniline	50	22.6	45	40-140
120-12-7	Anthracene	50	34.7	69	40-140
56-55-3	Benzo(a)anthracene	50	38.9	78	40-140
50-32-8	Benzo(a)pyrene	50	33.5	67	40-140
205-99-2	Benzo(b)fluoranthene	50	37.5	75	40-140
191-24-2	Benzo(g,h,i)perylene	50	36.0	72	40-140
207-08-9	Benzo(k)fluoranthene	50	38.3	77	40-140
101-55-3	4-Bromophenyl phenyl ether	50	33.2	66	40-140
85-68-7	Butyl benzyl phthalate	50	36.9	74	40-140
91-58-7	2-Chloronaphthalene	50	31.0	62	40-140
106-47-8	4-Chloroaniline	50	16.8	34* a	40-140
218-01-9	Chrysene	50	40.8	82	40-140
111-91-1	bis(2-Chloroethoxy)methane	50	36.5	73	40-140
111-44-4	bis(2-Chloroethyl)ether	50	35.5	71	40-140
108-60-1	bis(2-Chloroisopropyl)ether	50	35.6	71	40-140
7005-72-3	4-Chlorophenyl phenyl ether	50	32.7	65	40-140
121-14-2	2,4-Dinitrotoluene	50	38.6	77	40-140
606-20-2	2,6-Dinitrotoluene	50	36.8	74	40-140
91-94-1	3,3'-Dichlorobenzidine	50	21.6	43	40-140

6.2.1

6



# Blank Spike Summary

Job Number: M97427  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-BS	S21178.D	1	02/01/11	PR	01/28/11	OP23982	MSS887

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	Limits
53-70-3	Dibenzo(a,h)anthracene	50	37.9	76	40-140
132-64-9	Dibenzofuran	50	31.7	63	40-140
84-74-2	Di-n-butyl phthalate	50	36.7	73	40-140
117-84-0	Di-n-octyl phthalate	50	38.8	78	40-140
84-66-2	Diethyl phthalate	50	39.5	79	40-140
131-11-3	Dimethyl phthalate	50	37.3	75	40-140
117-81-7	bis(2-Ethylhexyl)phthalate	50	38.0	76	40-140
206-44-0	Fluoranthene	50	37.0	74	40-140
86-73-7	Fluorene	50	34.3	69	40-140
118-74-1	Hexachlorobenzene	50	35.2	70	40-140
77-47-4	Hexachlorocyclopentadiene	50	18.5	37* a	40-140
67-72-1	Hexachloroethane	50	27.8	56	40-140
193-39-5	Indeno(1,2,3-cd)pyrene	50	38.5	77	40-140
78-59-1	Isophorone	50	35.4	71	40-140
91-57-6	2-Methylnaphthalene	50	30.4	61	40-140
88-74-4	2-Nitroaniline	50	38.3	77	40-140
99-09-2	3-Nitroaniline	50	18.0	36* a	40-140
100-01-6	4-Nitroaniline	50	32.5	65	40-140
91-20-3	Naphthalene	50	33.4	67	40-140
98-95-3	Nitrobenzene	50	36.6	73	40-140
621-64-7	N-Nitroso-di-n-propylamine	50	39.5	79	40-140
86-30-6	N-Nitrosodiphenylamine	50	37.1	74	40-140
85-01-8	Phenanthrene	50	34.9	70	40-140
129-00-0	Pyrene	50	36.2	72	40-140
110-86-1	Pyridine	50	19.8	40	40-140

CAS No.	Surrogate Recoveries	BSP	Limits
367-12-4	2-Fluorophenol	39%	15-110%
4165-62-2	Phenol-d5	23%	15-110%
118-79-6	2,4,6-Tribromophenol	75%	15-110%
4165-60-0	Nitrobenzene-d5	71%	30-130%
321-60-8	2-Fluorobiphenyl	67%	30-130%
1718-51-0	Terphenyl-d14	69%	30-130%

6.2.1

6

# Blank Spike Summary

Job Number: M97427

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-BS	S21178.D	1	02/01/11	PR	01/28/11	OP23982	MSS887

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

(a) Outside control limits. Blank Spike meets program technical requirements.

6.2.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-MS	S21223.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
OP23982-MSD	S21224.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
M97427-2	S21226.D	1	02/02/11	PR	01/28/11	OP23982	MSS888

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

CAS No.	Compound	M97427-2 ug/l	Spike Q ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
65-85-0	Benzoic Acid	ND	106	49.0	46	55.1	53	12	30-130/20
95-57-8	2-Chlorophenol	ND	106	80.5	76	81.0	79	1	30-130/20
59-50-7	4-Chloro-3-methyl phenol	ND	106	94.4	89	93.2	90	1	30-130/20
120-83-2	2,4-Dichlorophenol	ND	106	96.0	90	95.9	93	0	30-130/20
105-67-9	2,4-Dimethylphenol	ND	106	93.1	88	94.6	92	2	30-130/20
51-28-5	2,4-Dinitrophenol	ND	106	109	102	111	108	2	30-130/20
534-52-1	4,6-Dinitro-o-cresol	ND	106	99.9	94	101	98	1	30-130/20
95-48-7	2-Methylphenol	ND	106	76.2	72	78.6	76	3	30-130/20
	3&4-Methylphenol	ND	213	136	64	137	66	1	30-130/20
88-75-5	2-Nitrophenol	ND	106	100	94	97.5	95	3	30-130/20
100-02-7	4-Nitrophenol	ND	106	47.5	45	50.7	49	7	30-130/20
87-86-5	Pentachlorophenol	ND	106	100	94	101	98	1	30-130/20
108-95-2	Phenol	106	106	140	32	127	20* a	10	30-130/20
95-95-4	2,4,5-Trichlorophenol	ND	106	93.8	88	96.1	93	2	30-130/20
88-06-2	2,4,6-Trichlorophenol	ND	106	88.9	84	89.2	87	0	30-130/20
83-32-9	Acenaphthene	ND	53.2	42.7	80	41.0	80	4	40-140/20
208-96-8	Acenaphthylene	ND	53.2	36.5	69	35.7	69	2	40-140/20
62-53-3	Aniline	ND	53.2	21.4	40	20.4	40	5	40-140/20
120-12-7	Anthracene	ND	53.2	44.7	84	43.5	84	3	40-140/20
56-55-3	Benzo(a)anthracene	ND	53.2	49.6	93	49.0	95	1	40-140/20
50-32-8	Benzo(a)pyrene	ND	53.2	40.5	76	41.1	80	1	40-140/20
205-99-2	Benzo(b)fluoranthene	ND	53.2	44.4	83	45.1	87	2	40-140/20
191-24-2	Benzo(g,h,i)perylene	ND	53.2	45.1	85	44.4	86	2	40-140/20
207-08-9	Benzo(k)fluoranthene	ND	53.2	47.8	90	46.2	90	3	40-140/20
101-55-3	4-Bromophenyl phenyl ether	ND	53.2	45.3	85	44.4	86	2	40-140/20
85-68-7	Butyl benzyl phthalate	ND	53.2	45.5	86	44.9	87	1	40-140/20
91-58-7	2-Chloronaphthalene	ND	53.2	40.0	75	38.4	74	4	40-140/20
106-47-8	4-Chloroaniline	ND	53.2	20.5	39* a	17.6	34* a	15	40-140/20
218-01-9	Chrysene	ND	53.2	52.1	98	49.3	96	6	40-140/20
111-91-1	bis(2-Chloroethoxy)methane	ND	53.2	45.7	86	45.5	88	0	40-140/20
111-44-4	bis(2-Chloroethyl)ether	ND	53.2	43.6	82	43.4	84	0	40-140/20
108-60-1	bis(2-Chloroisopropyl)ether	ND	53.2	45.9	86	46.7	91	2	40-140/20
7005-72-3	4-Chlorophenyl phenyl ether	ND	53.2	43.6	82	42.9	83	2	40-140/20
121-14-2	2,4-Dinitrotoluene	ND	53.2	48.9	92	49.2	95	1	40-140/20
606-20-2	2,6-Dinitrotoluene	ND	53.2	47.9	90	47.5	92	1	40-140/20
91-94-1	3,3'-Dichlorobenzidine	ND	53.2	ND	0* a	ND	0* a	nc	40-140/20

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-MS	S21223.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
OP23982-MSD	S21224.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
M97427-2	S21226.D	1	02/02/11	PR	01/28/11	OP23982	MSS888

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

CAS No.	Compound	M97427-2 ug/l	Spike Q	ug/l	MS ug/l	MS %	MSD ug/l	MSD %	RPD	Limits Rec/RPD
53-70-3	Dibenzo(a,h)anthracene	ND		53.2	47.6	89	47.1	91	1	40-140/20
132-64-9	Dibenzofuran	ND		53.2	42.7	80	41.4	80	3	40-140/20
84-74-2	Di-n-butyl phthalate	ND		53.2	44.6	84	47.2	92	6	40-140/20
117-84-0	Di-n-octyl phthalate	ND		53.2	43.9	83	44.4	86	1	40-140/20
84-66-2	Diethyl phthalate	0.86	J	53.2	50.0	92	49.7	95	1	40-140/20
131-11-3	Dimethyl phthalate	ND		53.2	47.4	89	47.6	92	0	40-140/20
117-81-7	bis(2-Ethylhexyl)phthalate	ND		53.2	44.9	84	45.0	87	0	40-140/20
206-44-0	Fluoranthene	ND		53.2	48.8	92	48.9	95	0	40-140/20
86-73-7	Fluorene	ND		53.2	45.3	85	44.8	87	1	40-140/20
118-74-1	Hexachlorobenzene	ND		53.2	46.3	87	46.9	91	1	40-140/20
77-47-4	Hexachlorocyclopentadiene	ND		53.2	25.3	48	26.6	52	5	40-140/20
67-72-1	Hexachloroethane	ND		53.2	33.7	63	34.8	68	3	40-140/20
193-39-5	Indeno(1,2,3-cd)pyrene	ND		53.2	48.0	90	47.9	93	0	40-140/20
78-59-1	Isophorone	ND		53.2	45.3	85	45.2	88	0	40-140/20
91-57-6	2-Methylnaphthalene	ND		53.2	40.3	76	39.6	77	2	40-140/20
88-74-4	2-Nitroaniline	ND		53.2	50.4	95	50.1	97	1	40-140/20
99-09-2	3-Nitroaniline	0.69	J	53.2	25.5	47	23.2	44	9	40-140/20
100-01-6	4-Nitroaniline	ND		53.2	42.4	80	42.1	82	1	40-140/20
91-20-3	Naphthalene	1.1	J	53.2	44.8	82	44.0	83	2	40-140/20
98-95-3	Nitrobenzene	ND		53.2	45.5	86	44.9	87	1	40-140/20
621-64-7	N-Nitroso-di-n-propylamine	ND		53.2	49.6	93	49.6	96	0	40-140/20
86-30-6	N-Nitrosodiphenylamine	ND		53.2	47.1	89	46.0	89	2	40-140/20
85-01-8	Phenanthrene	ND		53.2	45.6	86	45.9	89	1	40-140/20
129-00-0	Pyrene	ND		53.2	44.4	83	42.1	82	5	40-140/20
110-86-1	Pyridine	ND		53.2	22.1	42	24.4	47	10	40-140/20

CAS No.	Surrogate Recoveries	MS	MSD	M97427-2	Limits
367-12-4	2-Fluorophenol	45%	47%	45%	15-110%
4165-62-2	Phenol-d5	28%	30%	28%	15-110%
118-79-6	2,4,6-Tribromophenol	92%	96%	97%	15-110%
4165-60-0	Nitrobenzene-d5	86%	87%	87%	30-130%
321-60-8	2-Fluorobiphenyl	82%	83%	82%	30-130%
1718-51-0	Terphenyl-d14	79%	79%	79%	30-130%

6.3.1

6

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: M97427

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP23982-MS	S21223.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
OP23982-MSD	S21224.D	1	02/02/11	PR	01/28/11	OP23982	MSS888
M97427-2	S21226.D	1	02/02/11	PR	01/28/11	OP23982	MSS888

The QC reported here applies to the following samples:

Method: SW846 8270C

M97427-1, M97427-2, M97427-3

(a) Outside control limits due to possible matrix interference. Refer to Blank Spike.

6.3.1

6

# Semivolatle Internal Standard Area Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSS887-CC884	Injection Date:	02/01/11
Lab File ID:	S21176.D	Injection Time:	16:41
Instrument ID:	GCMSS	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	201622	5.72	780813	7.06	370762	9.24	559341	11.43	505227	15.78	501267	18.01
Upper Limit <sup>a</sup>	403244	6.22	1561626	7.56	741524	9.74	1118682	11.93	1010454	16.28	1002534	18.51
Lower Limit <sup>b</sup>	100811	5.22	390407	6.56	185381	8.74	279671	10.93	252614	15.28	250634	17.51

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
OP23983-MB	226558	5.71	935342	7.06	440804	9.24	658175	11.42	568401	15.77	547583	18.00
OP23982-MB	226558	5.71	935342	7.06	440804	9.24	658175	11.42	568401	15.77	547583	18.00
OP23983-BS	276639	5.71	1065008	7.06	506348	9.24	751598	11.43	640909	15.77	585986	18.00
OP23982-BS	276639	5.71	1065008	7.06	506348	9.24	751598	11.43	640909	15.77	585986	18.00
OP23983-MS	248473	5.71	990576	7.06	470949	9.24	691096	11.42	613985	15.77	580794	18.00
OP23983-MSD	248727	5.71	984234	7.06	465689	9.24	685020	11.42	616609	15.77	598596	18.00
M97394-2	196686	5.71	810659	7.06	379995	9.23	574595	11.42	506471	15.77	486930	18.00
ZZZZZZ	210273	5.71	868830	7.06	413727	9.24	628249	11.42	572608	15.77	566231	18.00
OP23992-MB	219005	5.71	894616	7.06	426518	9.24	638974	11.42	574318	15.77	564513	18.00
OP23992-BS	219757	5.71	844791	7.06	403528	9.24	588385	11.43	521149	15.77	517384	18.00
OP23992-MS	212009	5.71	813105	7.06	379362	9.24	566180	11.43	503971	15.77	499392	18.00
OP23992-MSD	217974	5.71	838545	7.06	399200	9.24	582936	11.43	505662	15.77	493448	18.00
M97452-1	205636	5.71	859676	7.06	412247	9.24	620566	11.42	559518	15.77	535041	18.00
ZZZZZZ	223795	5.71	890326	7.06	412134	9.24	620158	11.42	539134	15.77	528657	18.00
ZZZZZZ	214333	5.71	887844	7.06	419479	9.24	628548	11.42	558955	15.77	551793	18.00
ZZZZZZ	219760	5.71	900650	7.06	422821	9.24	636700	11.42	558050	15.77	543805	18.00
ZZZZZZ	232062	5.71	959046	7.06	461026	9.24	684866	11.42	608354	15.77	599766	18.00
ZZZZZZ	235374	5.71	972743	7.06	457350	9.24	702935	11.42	601975	15.77	579175	18.00
ZZZZZZ	213341	5.71	869920	7.06	422007	9.24	626828	11.42	542398	15.77	532970	18.00
ZZZZZZ	222268	5.71	899583	7.06	428052	9.24	645009	11.42	559187	15.77	551389	18.00
ZZZZZZ	217133	5.71	895812	7.06	423168	9.24	635893	11.42	559925	15.77	557283	18.00
ZZZZZZ	217136	5.71	871008	7.06	409250	9.24	604999	11.42	515639	15.77	497561	18.00
ZZZZZZ	228958	5.71	925721	7.06	433549	9.24	626860	11.42	510517	15.77	480863	18.00
ZZZZZZ	236729	5.71	949003	7.06	446436	9.24	615152	11.43	512583	15.77	500527	18.00
ZZZZZZ	226069	5.72	906777	7.06	417905	9.24	580958	11.43	490355	15.77	487700	18.00
ZZZZZZ	220990	5.72	893891	7.06	405618	9.24	585946	11.42	487214	15.77	469344	18.00
ZZZZZZ	219298	5.72	785882	7.07	378894	9.25	552398	11.43	449032	15.77	452629	18.00

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

6.4.1  
6

# Semivolatile Internal Standard Area Summary

Job Number: M97427  
Account: SHELLWIC Shell Oil  
Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSS887-CC884	Injection Date:	02/01/11
Lab File ID:	S21176.D	Injection Time:	16:41
Instrument ID:	GCMSS	Method:	SW846 8270C

Lab	IS 1	IS 2	IS 3	IS 4	IS 5	IS 6				
Sample ID	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT

- (a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.
- (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.1

6

# Semivolatiles Internal Standard Area Summary

Job Number: M97427  
 Account: SHELLWIC Shell Oil  
 Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Check Std:	MSS888-CC884	Injection Date:	02/02/11
Lab File ID:	S21213.D	Injection Time:	12:54
Instrument ID:	GCMSS	Method:	SW846 8270C

	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
Check Std	163195	5.72	636245	7.07	303706	9.25	456723	11.44	428438	15.79	414759	18.02
Upper Limit <sup>a</sup>	326390	6.22	1272490	7.57	607412	9.75	913446	11.94	856876	16.29	829518	18.52
Lower Limit <sup>b</sup>	81598	5.22	318123	6.57	151853	8.75	228362	10.94	214219	15.29	207380	17.52

Lab Sample ID	IS 1		IS 2		IS 3		IS 4		IS 5		IS 6	
	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT	AREA	RT
ZZZZZZ	153876	5.72	644200	7.07	311817	9.25	478355	11.43	432471	15.78	430786	18.02
ZZZZZZ	188231	5.72	756203	7.07	372070	9.25	547151	11.43	468631	15.79	448103	18.02
ZZZZZZ	180844	5.72	744597	7.07	363502	9.25	554158	11.43	492731	15.79	481183	18.02
ZZZZZZ	133383	5.72	556129	7.07	267158	9.25	412175	11.43	367456	15.78	359904	18.02
ZZZZZZ	196045	5.72	805982	7.07	391757	9.25	581409	11.43	491353	15.79	471756	18.02
ZZZZZZ	187772	5.72	778262	7.07	373597	9.25	562799	11.43	507506	15.79	488668	18.02
ZZZZZZ	197713	5.72	822333	7.07	397650	9.25	609042	11.43	538695	15.79	522884	18.02
ZZZZZZ	186149	5.72	752311	7.07	368481	9.25	561793	11.43	508037	15.79	496618	18.02
ZZZZZZ	194109	5.72	798381	7.07	394050	9.25	590743	11.43	529269	15.78	507312	18.02
OP23982-MS	173864	5.72	665027	7.07	319891	9.25	478058	11.44	428244	15.79	429183	18.02
OP23982-MSD	174057	5.72	677142	7.07	323062	9.25	487152	11.43	441664	15.79	437928	18.02
M97427-1	172579	5.72	702657	7.07	341221	9.25	531801	11.43	462993	15.78	468300	18.02
M97427-2	171997	5.72	701838	7.07	343974	9.25	521496	11.43	464968	15.78	458609	18.02
M97427-3	178896	5.72	714774	7.07	351291	9.25	547595	11.43	461989	15.78	464311	18.02
ZZZZZZ	181307	5.72	744551	7.07	356081	9.25	547214	11.43	487837	15.78	480694	18.02
ZZZZZZ	185150	5.72	769476	7.06	368321	9.25	552772	11.43	509251	15.78	488099	18.01
OP23963-MB	223635	5.72	904117	7.06	444024	9.25	667369	11.43	570705	15.78	517933	18.01
OP23963-BS	186914	5.72	726279	7.07	342642	9.25	512609	11.43	449976	15.78	399841	18.02
OP23963-MS	183005	5.72	707658	7.06	332292	9.25	481805	11.43	405146	15.78	365992	18.01
OP23963-MSD	207483	5.72	810349	7.07	400003	9.25	602490	11.43	496412	15.78	458168	18.02
M97350-10	202524	5.72	844111	7.06	400402	9.25	594470	11.43	502754	15.78	475366	18.01

- IS 1 = 1,4-Dichlorobenzene-d4
- IS 2 = Naphthalene-d8
- IS 3 = Acenaphthene-D10
- IS 4 = Phenanthrene-d10
- IS 5 = Chrysene-d12
- IS 6 = Perylene-d12

(a) Upper Limit = +100% of check standard area; Retention time +0.5 minutes.  
 (b) Lower Limit = -50% of check standard area; Retention time -0.5 minutes.

6.4.2

6



# Semivolatile Surrogate Recovery Summary

Job Number: M97427

Account: SHELLWIC Shell Oil

Project: URSMOSTL:97216640 170 East Rand Avenue Hartford, IL

Method: SW846 8270C

Matrix: AQ

Samples and QC shown here apply to the above method

Lab Sample ID	Lab File ID	S1	S2	S3	S4	S5	S6
M97427-1	S21225.D	44.0	27.0	92.0	82.0	79.0	80.0
M97427-2	S21226.D	45.0	28.0	97.0	87.0	82.0	79.0
M97427-3	S21227.D	40.0	25.0	88.0	83.0	78.0	75.0
OP23982-BS	S21178.D	39.0	23.0	75.0	71.0	67.0	69.0
OP23982-MB	S21177.D	36.0	22.0	77.0	70.0	67.0	76.0
OP23982-MS	S21223.D	45.0	28.0	92.0	86.0	82.0	79.0
OP23982-MSD	S21224.D	47.0	30.0	96.0	87.0	83.0	79.0

### Surrogate Compounds                      Recovery Limits

S1 = 2-Fluorophenol	15-110%
S2 = Phenol-d5	15-110%
S3 = 2,4,6-Tribromophenol	15-110%
S4 = Nitrobenzene-d5	30-130%
S5 = 2-Fluorobiphenyl	30-130%
S6 = Terphenyl-d14	30-130%

6.5.1

6